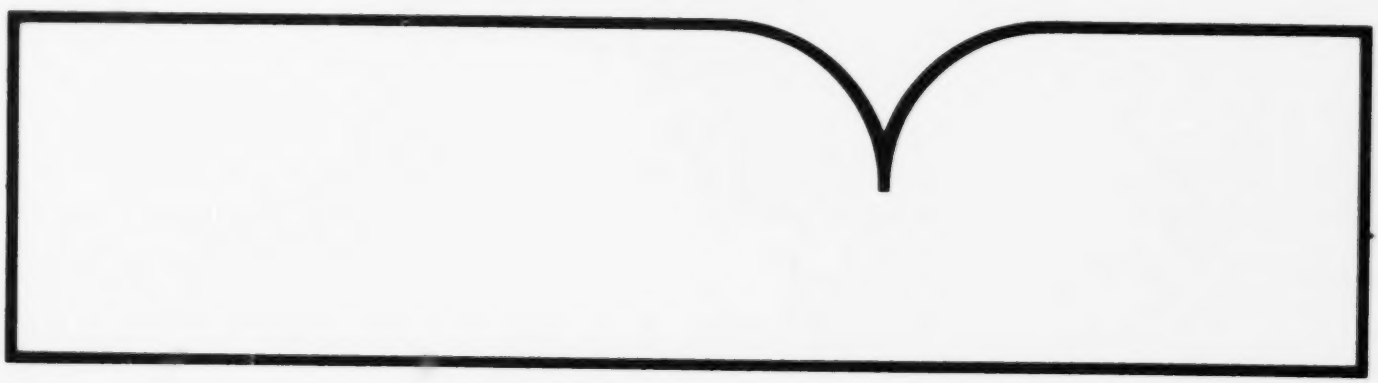
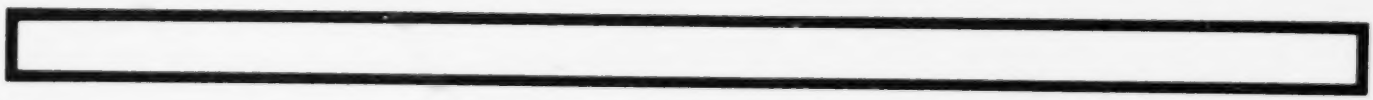
PB88-126479

Superfund Record of Decision (EPA Region 6)
Cleve Reber, Ascension Parish, Louisiana
(First Remedial Action), March 1987

(U.S.) Environmental Protection Agency
Washington, DC

31 Mar 87





U.S. Department of Commerce
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United States
Environmental Protection
Agency

Office of
Emergency and
Remedial Response

EPA/ROD/R06-87/020
March 1987

EPA

Superfund Record of Decision:

CLEVE REBER, LA

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16. ABSTRACT

The Cleve Reber site is located in Ascension Parish between Baton Rouge and New Orleans, Louisiana. Originally a burrow pit for the construction of a local highway, it was subsequently used as a landfill for both municipal and industrial waste. There are an estimated 6,400 drums buried at shallow depths on this 24.6 acre site. The site lies within a 100 year flood plain and the area surrounding the site may fall within the wetlands classification. The site currently contains four surface water ponds. Between 1970 and 1974, it was used as a landfill for both municipal and industrial waste. No records of the waste received at the site are available. The wastes were reportedly segregated into municipals, chemical waste piles and landfilled. Numerous drums containing chemical wastes were buried onsite. Volatile chemical wastes during handling and disposal reportedly resulted in nausea and illness to the landfill employees. In 1974, the site was abandoned and in 1979 declared an abandoned hazardous waste site by the State. In 1983, the State fenced in the site due to local concern; and in July 1983, EPA conducted an emergency removal. Approximately 1,100 surface barrels were removed in addition to surface waste piles. A thin clay cap was placed over the areas thought to contain buried drums/wastes. After two comprehensive field investigation efforts, starting in July 1984 and January 1986 respectively, EPA determined that all significant contamination was restricted to the site. The primary hazard of concern is
(See Attached Sheet)

17. KEY WORDS AND DOCUMENT ANALYSIS

a. DESCRIPTORS	b. IDENTIFIERS/OPEN ENDED TERMS	c. COSATI Field/Group
Record of Decision Cleve Reber, LA First Remedial Action Contaminated Media: gw, sw, soil, sediment Key contaminants: hexachlorobenzene, organics		

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EPA/ROD/R06-87/020
Cleve Reber, LA

16. ABSTRACT (continued)

associated with the buried drums and bulk sludges with as the primary contaminant of concern. It has a high affinity for the local days. This coupled with a small ground water gradient, are reasons to believe that to date, contaminant migration has not spread beyond the site boundaries. However, the potential exists for future migrations and contamination. The contaminated media includes: the ground water, surface water, soil and sediments.

The selected remedial action includes: excavation and onsite incineration of buried drums and sludges; drainage and backfilling of onsite ponds (with solidification of nonincinerable wastes, notably mercuric sulfide); capping the portion of the site that was used for the disposal of industrial/hazardous waste; ground water monitoring (remediation is not considered necessary). The estimated capital cost is $25,000,000 with annual O&M cost of $100,000.

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

CLEVE REBER

ASCENSION PARISH, LOUISIANA

MARCH 1987

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RECORD OF DECISION
REMEDIAL ALTERNATIVE SELECTION

Site: Cleve Reber, Ascension Parish, Louisiana

DOCUMENTS REVIEWED

I have reviewed the following documents describing the analysis of cost-effectiveness of remedial alternatives for the Cleve Reber Site:

- Remedial Investigation Report (RI); Cleve Reber, May 1985.

- Feasibility Study Report (FS); Cleve Reber, May 1985.

- Supplemental Report to the Cleve Reber Site; Remedial Investigation and Feasibility Study, September 1986.

- Public Health Evaluation; Cleve Reber Site, September 1986.

- Summary of Remedial Alternative Selection, Cleve Reber, March 1987.

- Community Relations Responsiveness Summary, March 1987.

- Staff summaries and recommendations.

DESCRIPTION OF SELECTED REMEDY

- Excavation and onsite incineration of buried drums and sludges.

- Drain and backfill onsite ponds.

  o Nonincinerable waste will be solidified.

- RCRA cap.

- Groundwater monitoring (remediation not considered necessary).

DECLARATION

Consistent with the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) as amended by the Superfund Amendments Reauthorization Act of 1986 (SARA) and the National Contingency Plan (40 CFR Part 300), I have determined that the selected remedy for the Cleve Reber Site is cost-effective and provides adequate protection of public health, welfare, and the environment. The State of Louisiana has been consulted and agrees with the approved remedy. The action will require future operation and maintenance activities to ensure the

V

has been consulted and agrees with the approved remedy. The action will require future operation and maintenance activities to ensure the continued effectiveness of the remedy. These activities are considered part of the approved action, and eligible for Trust Fund monies for a period up to one year.

The remedial plan will also include long-term groundwater pumping and treatment. The costs associated with these activities are eligible for Trust Fund for a period of up to ten years. I have also determined that the action being taken is appropriate when balanced against the availability of Trust Fund monies for use at other site.

March 31, 1987
DATE

Robert E. Layton Jr.
Robert E. Layton Jr., P.E.
Regional Administrator

VI

EXECUTIVE SUMMARY

The Cleve Reber Superfund Site is located in Ascension Parish, Louisiana. Originally a borrow pit for the construction of a local highway, it was subsequently used as a landfill for both municipal and industrial waste.

After citizen's compliants about the site and follow up inspections by the State of Louisiana the EPA conducted an emergency removal of approximately 1,100 surface drums and chemical waste piles in July 1983. According to records received from the potentially responsible parties, there are an estimated 6,400 buried drums of hazardous substances buried onsite.

After two comprehensive field investigation efforts, starting in July 1984 and January 1986, respectively, the EPA has determined that all significant contamination is restricted to the site. The primary hazard of concern is associated with the buried drums and bulk sludges. Although the area drinking water aquifer (Norco) has been found to be free of contamination, contaminant migration has occurried in a thin water bearing sand zone located at approximately 30 feet below the surface. Contamination has not, however, spread beyond the site boundaries.

Hexachlorobenzene, the primary contaminant of concern has a high affinity for the local clays. This was established during the field investigation and supported by literature. This coupled with a very small groundwater gradient, are the reasons it is believed that contaminant migration has not spread beyond the site boundaries thus far. The potential exists, however, for future migration.

After reviewing numerous remedial alternatives, the EPA has proposed complete excavation and thermal destruction of all buried drums and bulk sludges. The thermal destruction unit envisioned would be mobile. Included as part of the remedial action would be the draining and backfilling of all site ponds and ultimately a multilayered clay and soil cap. The capital cost is estimated at $25 million.

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

CLEVE REBER

SITE LOCATION AND DESCRIPTION

The Cleve Reber site is located in Ascension Parish between Baton Rouge and New Orleans, Louisiana. It is one mile south of Highway 22 on the east side of Highway 70. Reference Figures 1 and 2. The site is rectangular in shape with an area of approximately 24.6 acres. The adjoining land areas to the east and south are covered by swamps and dense vegetation. The areas to the north and west are primarily residential with some agricultural uses. The residential areas are sparsely populated.

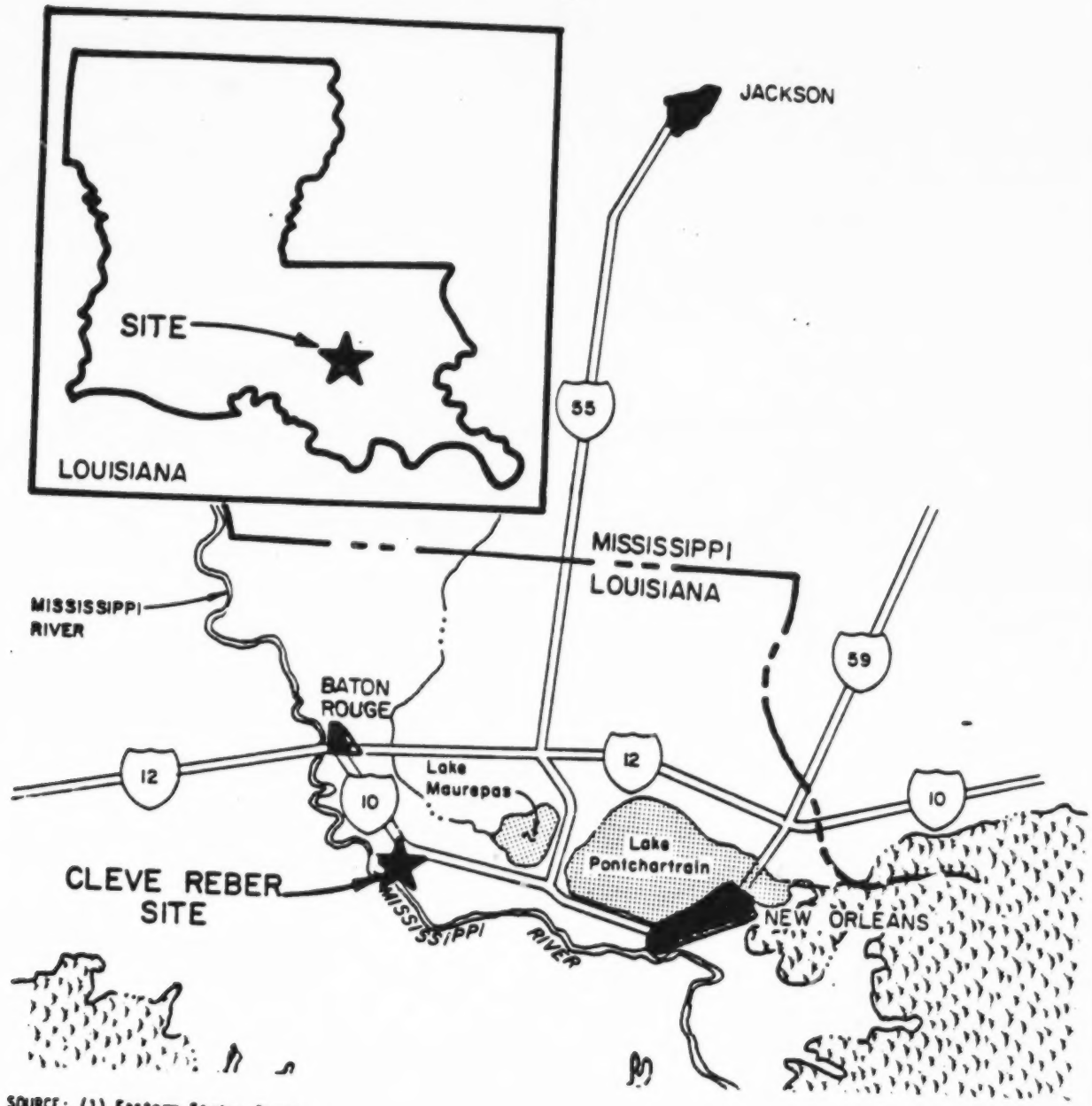
The site contains four surface water ponds as shown on Figure 3, and an estimated 6400 buried drums at shallow depths. The site and surrounding area is relatively flat and exhibits the characteristics of high-water areas prone to periodic flooding and poor drainage. According to the U. S. Army Corps. of Engineers, the site is within the theoretical 100 year floodplain of both Lake Maurepas and Lake Pontchartrain, located approximately 15 and 26 miles respectively, to the east.

The primary natural resources in the area that could potentially be adversely affected by the Cleve Reber site contaminants are the groundwater and surface water. The site is underlain by approximately 220 feet of very plastic clays. Within this clay formation is a clayey silt/silty sand strata of varying thickness located 30 to 50 feet below the ground surface (Shallow Sand). This zone can be categorized as a thin aquifer, but its groundwater is not known to be used by any area residents. Located approximately 170 feet below this zone of higher permeability is another sand strata that is approximately 10-15 feet thick (Deep Sand). Below this and separated by a 10 foot thick clay is the Norco Aquifer (See Figure 4). The Norco Aquifer is the natural resource of major concern. This aquifer is a surface flowing artesian aquifer and is the primary source of fresh water in the vicinity of the site, as well as a major source of water within Ascension Parish for both industrial and private use.

Surface water and sediments may also be affected by contaminant run-off from the site. Surface drainage from the site is from east to southeast to the Panana Canal, which flows east and drains into a swamp that empties into the Blind River. The Blind River discharges into Lake Maurepas and then to Lake Pontchartrain.

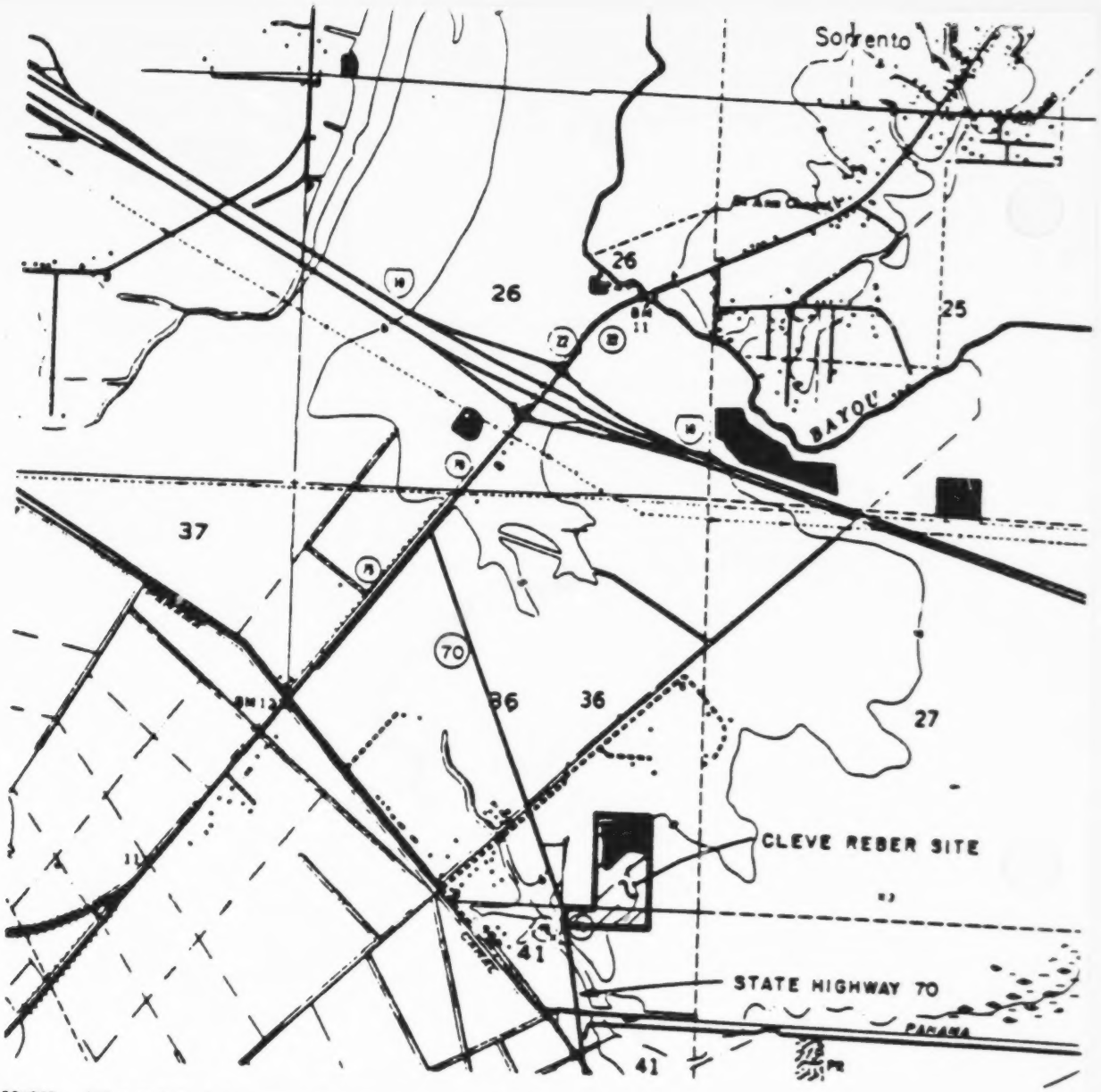
SITE HISTORY

The Cleve Reber site, previously referred to as the Ascension Parish Sanitary Landfill during its operation, was used as a source of borrow material in the construction of the embankments for the Sunshine Bridge and portions of Interstate Highway 10 prior to its use as a disposal facility.



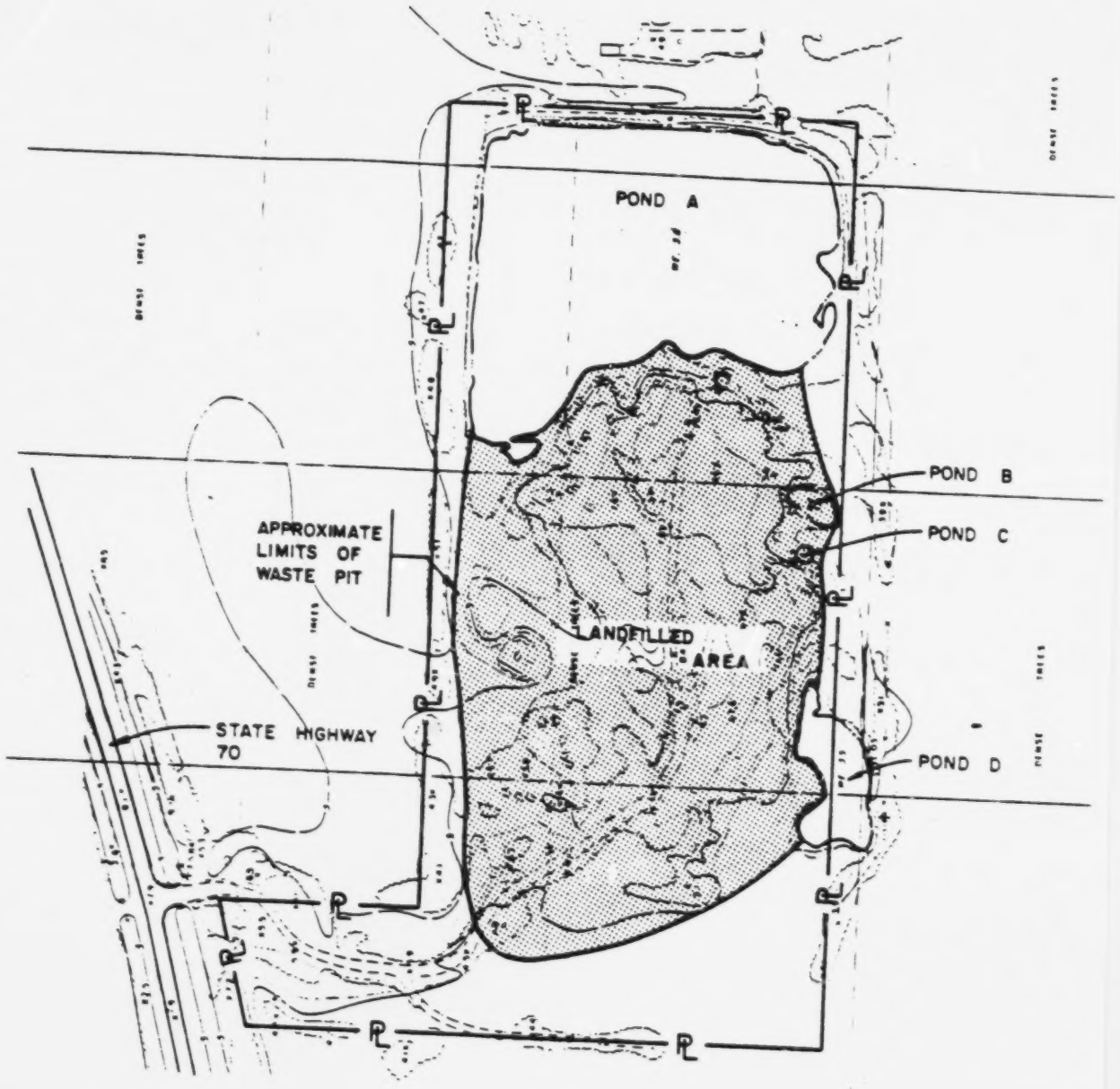
SOURCE: (1) Eastern States South Map, American Automobile Association, scale: 1"=30 miles.

FIGURE 1
SITE LOCATION MAP
CLEVE REBER SITE FS



SOURCE: (1) U.S.G.S. 7.5' Topographic Maps, Gonzales Quadrangle, Louisiana, Dated: 1961, Photorevised 1980 and Sorrento Quadrangle, Louisiana, Dated: 1962, Photorevised: 1980, Scale: 1" = 2,000'

FIGURE 2
SITE VICINITY MAP
CLEVE REBER SITE



SOURCE: (1) Martinez Mapping and Engineering
Date of Photography: April 23, 1984.
Scale: 1" = 100'

LEGEND

WASTE PIT

N

0 250

125

SCALE IN FEET

FIGURE 3
EXISTING SITE CONDITIONS
CLEVE REBER SITE FS

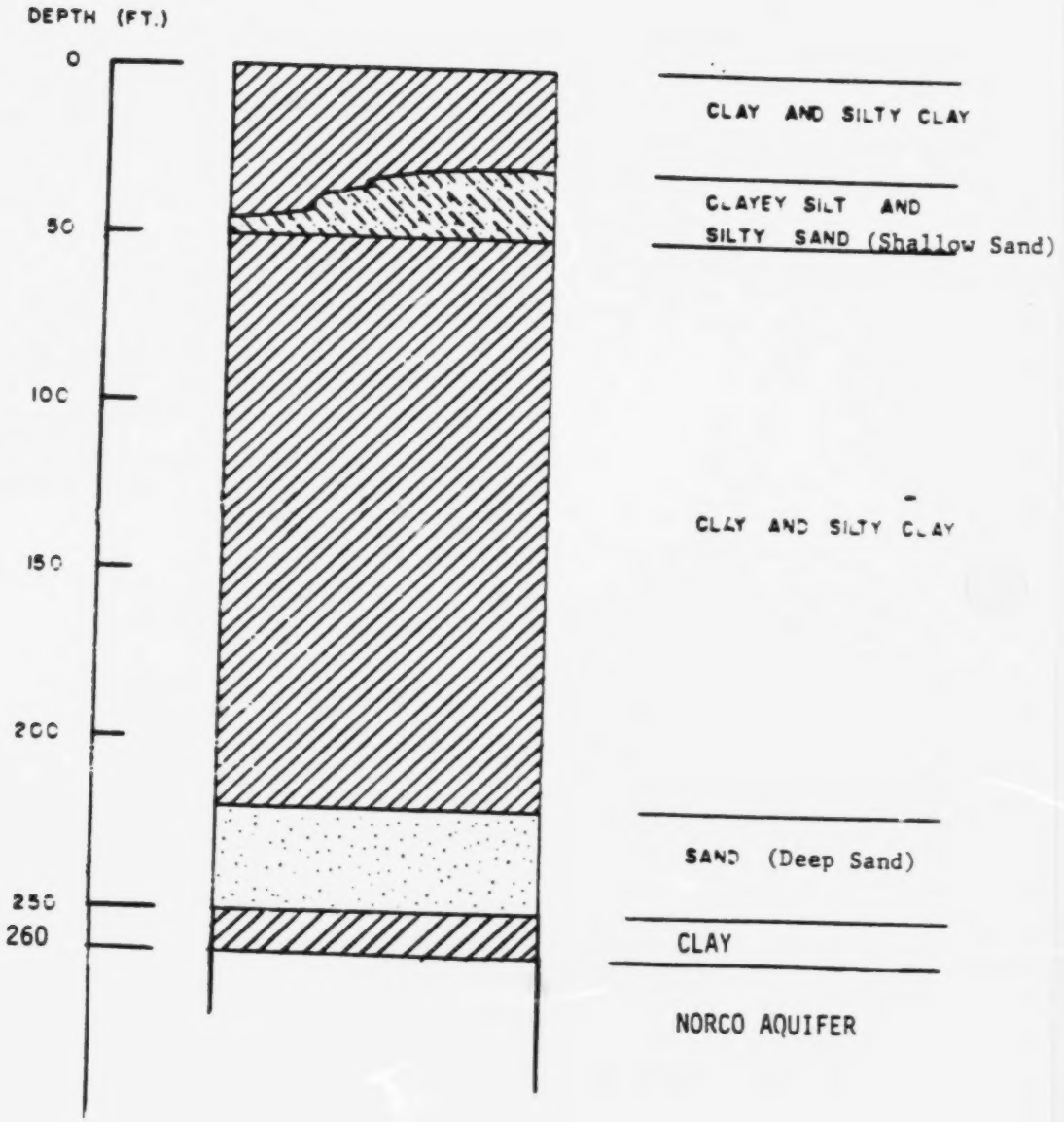


FIGURE 4
GENERALIZED GEOLOGIC SECTIO
CLEVE REBER SITE FS

The site was originally used as a landfill for municipal waste but was later used for industrial waste. During the period of 1970 and 1974, both municipal and industrial wastes were received at the site. No records of the waste received at the site are available. The wastes were reportedly segregated into municipal and chemical waste piles and landfilled. Numerous drums containing chemical wastes were reported by employees of the site and waste generators to have been buried on site. Spillage of volatile chemical wastes during handling and disposal reportedly resulted in nausea and illness to the landfill employees. The site was abandoned in 1974.

After many site inspections and sampling efforts, the site was declared an abandoned hazardous waste site by the State, in October 1979. The state fenced the site in 1983 due to local concern, and in July 1983, the EPA conducted an emergency removal. Over 1,100 surface barrels were removed in addition to surface waste piles. A thin clay cap was placed over the areas thought to contain buried drums/wastes.

In July 1984, a Remedial Investigation (RI) was initiated by the EPA. An additional field investigation was undertaken in February 1985 to better characterize the site.. The RI/FS was completed May 30, 1985, and a public meeting was held on June 26, 1985.

During the week of June 10, 1985, additional groundwater samples were collected at the site in an effort to analyze for certain contaminants - at a concentration level consistent with their 10^{-6} lifetime carcinogenic health risk factor.

The primary compound of concern is hexachlorobenzene (HCB). It has a 10^{-6} carcinogenic health risk factor of 21 parts per trillion (ppt). The standard Contract Lab Program (CLP) detection limit is only 10 parts per billion (ppb). The Region became aware of this discrepancy in May 1985 when the Feasibility Study guidance document was finalized. The 10^{-6} cancer risk for HCB was published in this guidance report. In order to ensure that the site related risks were adequately defined, the Region lowered the analytical detection limit for HCB to 5 ppt and resampled select onsite and offsite wells. The onsite wells sampled were both shallow (approximately 30') and deep (200') and the offsite wells were residential (approximately 300 feet).

The additional groundwater results were not received until July and, therefore, were not known prior to the public meeting. At the time it was decided to hold the already scheduled public meeting since sampling efforts to date had not shown any contaminant migration, the area clays were considered very impermeable, and because a computer model had predicted that it would take in excess of 1500 years before contaminants would reach the Shallow Sand. Considering the site a secure natural "vault", the Agency proposed a capping-in-place remedy during the public meeting.

As stated, the sample results from the June 10, 1985, sampling effort were received in July 1985. Contrary to what was expected, HCB contamination was detected in the Shallow Sand (residential wells,

however, placed in the Norco were clean). Because of this the Agency decided to postpone a final decision on a preferred alternative remedial action until the extent of, and health risks associated with, the groundwater could be more definitively characterized.

Workplan development for the new ppt groundwater investigation began in August 1985 and field work began in January 1986. This supplemental investigation was completed in April 1986 and a final report was issued on September 30, 1986, (Supplemental RI/FS). Included in this report is an expanded analysis of innovative remedial technologies for implementation. A risk assessment report was also written (Public Health Evaluation, September 30, 1986).

CURRENT SITE STATUS

General

The results of the laboratory testing of the field samples collected during the original and supplemental RI indicate that all significant contamination is restricted to the site. Onsite media including the surface water, waste pit leachate, surface soils, subsurface soil/material and pond sediments were contaminated with organic pollutants. Groundwater in the Shallow Sand beneath the site showed elevated levels of HCB, Hexachlorobutadiene (HCBD) and hexachloroethane (HCE). Although HCB is the primary contaminant of concern, HCBD and HCE were also analyzed since they are related compounds and are believed to come from the same waste sources. HCBD and HCE are also thought to be more mobile than HCB.

With respect to air, the ambient air quality of the site is within background levels and elevated concentrations of organic vapors are encountered only when the surface of the site is disturbed.

Inorganic analyses indicated a wide range of concentration levels in the onsite media and in background samples. No consistently high concentrations were observed. This made qualitative evaluations of any inorganic concentrations found very difficult and impractical; therefore inorganics were not considered for use as indicators of contaminant migration. (Based on information supplied by the potentially responsible parties, however, mercuric sulfide was disposed of at the site).

The primary organic pollutants of concern include hexachlorobenzene, hexachlorobutadiene, N-nitrosodiphenylamine, hexachloroethane and tetrachloroethene. All of these contaminants are considered to be carcinogens by the Cancer Assessment Group of the U.S. Public Health Service. Table 1 indicates the health standards and criteria that are potentially applicable to the Cleve Reber site. (The primary contaminants of concern during the supplemental RI were HCB, HCBD and HCE; HCB is considered the most carcinogenic of the site contaminants and HCBD and HCE are indicators). It is important to note that these criteria are based on the ingestion of water and/or aquatic organisms. The approach used to evaluate soil and sediment contamination was to compare the reported values for each sample with those of the soil and sediment

Table 1

CLEVE REBER SITE

STANDARDS AND CRITERIA POTENTIALLY APPLICABLE TO UNCONTROLLED HAZARDOUS WASTE SITES

Semi-Volatile Parameters	Clean Water Act Water Quality Criteria for Human Health 1 (Carcinogenic Risk=10-6	Safe Drinking Water Act MCLS
2,4,6-trichlorophenol	(1.8)	NA
pentachlorophenol	1,010	NA
phenol	3,500	NA
hexachlorobenzene	(21.0 ng/1)	NA
hexachloroethane	(2.4)	NA
1,2-dichlorobenzene	400	NA
1,3-dichlorobenzene	400	NA
1,4-dichlorobenzene	400	NA
fluoranthene	188	NA
hexachlorobutadiene	(0.45)	NA
hexachlorocyclopentadiene	206	NA
N-nitrosodiphenylamine	(4.9)	NA
diethyl phthalate	434 mg/1	NA
Volatile Parameters		
benzene	(0.67)	NA
carbon tetrachloride	(0.42)	NA
chlorobenzene	488	NA
1,2-dichloroethane	(0.94)	NA
1,1,1-trichloroethane	(1.9 mg/1)	NA
1,1,2-trichloroethane	(0.6)	NA
1,1,2,2-tetrachloroethane	(0.17)	NA
chloroform	(0.19)	100
1,1-dichloroethene	(0.033)	NA
1,2-trans-dichloroethane	NA	2,700*
ethylbenzene	2.4 mg/1	NA
methylene chloride	(0.19)	NA
fluorotrichloromethane	(0.19)	NA
tetrachloroethene	(0.8)	NA
toluene	14.3 mg/1	NA
trichloroethene	(2.8)	NA
vinyl chloride	(2.0)	NA
o-xylene	NA	12,000*
Inorganic Parameters		
antimony	(14.6)	NA
arsenic	(2.5 ng/1)	NA
barium	NA	NA
beryllium	(3.9 ng/1)	NA

Table 1 Continued

CLEVE REBER SITE

STANDARDS AND CRITERIA POTENTIALLY APPLICABLE TO UNCONTROLLED HAZARDOUS WASTE SITES

Inorganic Parameters	Clean Water Act Water Quality Criteria for Human Health 1 (Carcinogenic Risk=10-6	Safe Drinking Water Act MCLS
cadmium	(1.2)	NA
chromium	50	NA
copper	1,000 (organoleptic)	1,000
iron	NA	300
lead	50	NA
manganese	NA	50
mercury	10	NA
nickel	15.4	NA
selenium	10	NA
silver	50	NA
thallium	17.8	NA
zinc	5,000 (organoleptic)	5,000
Pesticide Parameters		
endosulfan II	138	NA
PCB 1260	(>6.2 ng/l)	NA

Units: ug/l unless otherwise specified
* value represents suggested no-adverse response level (SNARL) for one day exposure
NA not available
1 ingestion of water and organisms
organoleptic - taste and odor properties

background samples. The Agency for Toxic Substances Disease Registry also helped in the evaluation/assessment of the soil.

The major volume of waste disposed of at the Cleve Reber site was municipal waste. Industrial wastes with hazardous constituents were also disposed onsite. Industrial wastes were disposed in both drums and in bulk form. The laboratory test results presented in the RI and data obtained from the PRPs indicate that hazardous organic compounds, including solvents, were disposed onsite. Based upon test results from the sampling of four leachate wells and results from two waste samples within the waste pit, it appears that the hazardous substances have migrated throughout the waste pit and have mixed with the municipal waste by way of the leachate.

Waste Pit

The limits and depth of the waste pit at the site have been investigated using the results of onsite drilling and test pit excavations. The data indicates that the depth of the waste pit varies from about 6 to 20 ft., with an average depth of about 10 ft. The limits and depths of the pit, based on the test borings and test pits, are shown on Figure 5. (The potentially responsible parties, using historical photography of the site have challenged the pit delineation - this is being reviewed). The volume of hazardous waste remaining onsite within the pit is calculated to be about 220,000 cubic yards. This includes drums and bulk sludges.

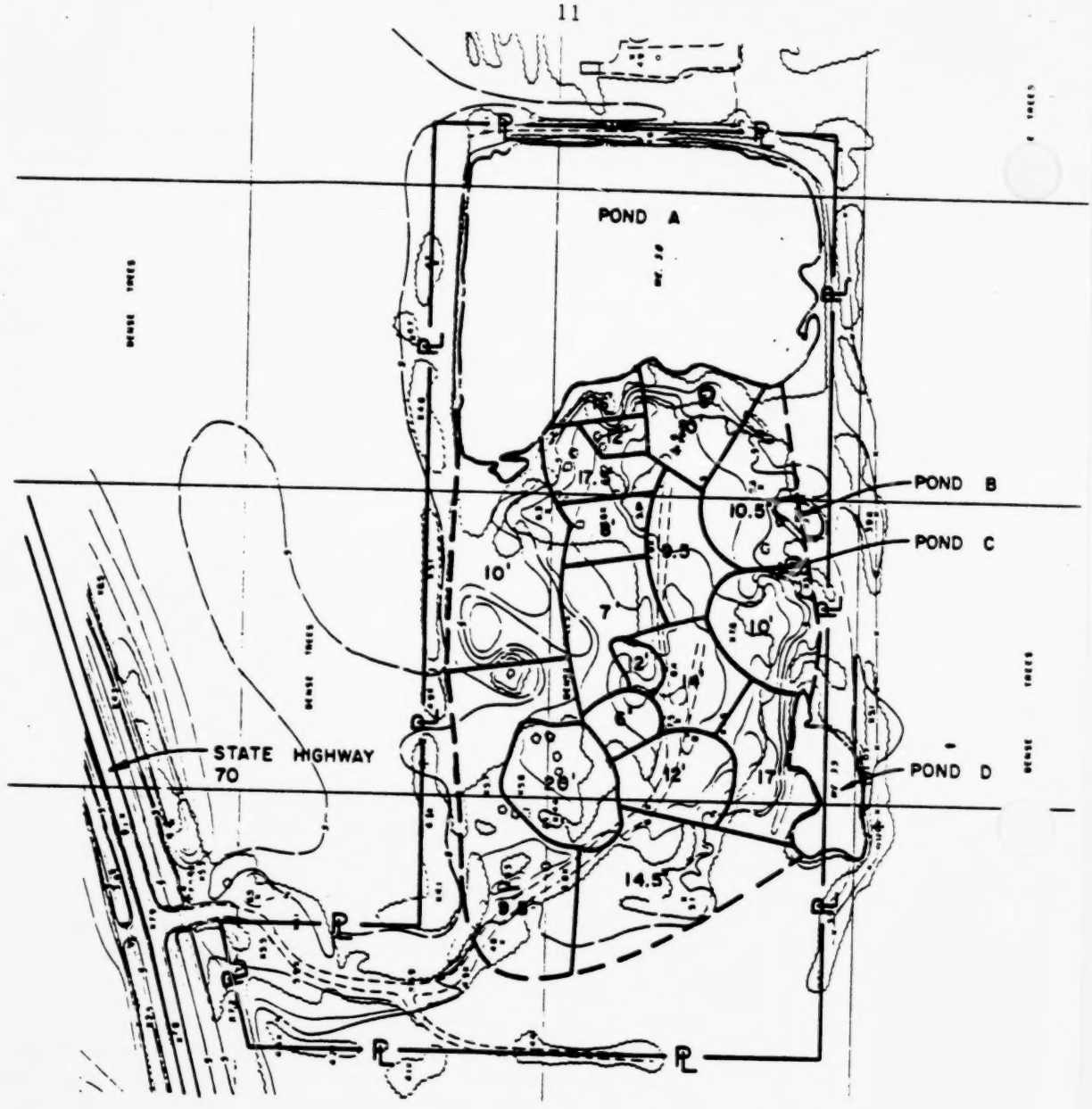
6,400 drums may remain buried onsite based on information provided by the PRPs. The test pits excavated onsite suggest that the drums are located along the northern and northeastern portions of the waste pit south of Pond A. This is supported by a study of historic aerial photographs conducted by the PRPs. The drums observed in the test pits were rusted and leaking. Generally those drums above the water table were in poor shape, and those below, in satisfactory condition. The water table onsite is approximately 3-5 feet below grade.

The contents of the drums are not exactly known. Their relative hazard has been assumed based upon leachate sample results (Table 2) and also records/information obtained from cooperating PRPs. The term leachate refers to that liquid phase that is present at the bottom of the waste pit. Leachate samples were obtained by drilling through the waste pit.

Onsite Ponds/Sediments

The volume of onsite surface water in the ponds, based on depth soundings, is calculated to be about 22,000,000 gallons. Of this volume only 500,000 gallons is considered contaminated. 21,500,000 gallons is located in Ponds A and C - and has been found not to be contaminated.

Onsite surface water samples were taken during both the original and supplemental field investigations. The results of the original investigation are given in Table 3. Ignoring lab contaminants, the water in Ponds B and D is slightly contaminated and that in ponds A and C is clean when compared to surface water discharge standards.



SOURCE: (1) Martinez Mapping and Engineering
Date of Photography: April 23, 1984.
Scale: 1" = 100'

LEGEND

10' ESTIMATED DEPTH OF WASTE

— — ESTIMATED LIMITS OF WASTE PIT

N

0 250

125

SCALE IN FEET

FIGURE 5
ESTIMATED DEPTH OF WASTE
CLEVE REBER SITE FS

TABLE 2

SUMMARY LIST OF PARAMETERS IDENTIFIED
ONSITE LEACHATE

Semi-Volatile Parameters	Number of Times Identified[1]	Range
hexachloroethane	2	230-350
1,3-dichlorobenzene	2	35-38
hexachlorobutadiene	3	1,200-2,900
Volatile Parameters		
benzene	2	12-170
chlorobenzene	3	LT-1,000
1,2-dichloroethane	3	49-800
1,1,1-trichloroethane	2	150-150
1,1-dichloroethane	4	85-4,900
chloroethane	4	LT-22,000
1,2-trans-dichloroethene	5	8.3-6,600
tetrachloroethene	3	2,300-3,700

Notes:

1-5 samples taken
units: ug/l,
LT below detection limit, but greater than 1/2 detection limit

TABLE 3
CLEVE REBER SITE

SUMMARY LIST OF PARAMETERS IDENTIFIED
ONSITE SURFALE WATER

Semi-Volatile Parameters	Number to Times Identified[1]	Range
2,4,6-trichlorophenol	1	20
hexachlorobenzene	2	57-80
1,3-dichlorobenzene	2	26-31
Volatile Parameters		
toluene	2	5.1-5.5
acetone	2	610-1,500

Notes

1 - Ten samples taken
Units; ug/l

Two additional samples were collected from Pond A as part of the supplemental RI to see if it may be serving as a source of low level ppt contamination for the Shallow Sand since the pond's southern edge is hydraulically connected with the northern face of the waste pit. The results of analyses of these samples are shown below:

	HCE (ppt)	HCBD (ppt)	HCB(ppt)
Sample 1	4	.64	28500*
2	ND	.41	71

* This sample is apparently affected by sediments based on the reported solubility of HCB in water of 6000 ppt.

These results support the original RI's findings that Pond A is not significantly contaminated with respect to existing surface water quality criteria. The levels of contaminants detected are significant, however, considering the 10^{-6} carcinogenic health risk factor for drinking water of 21 ppt.

The likely reason for Pond A not exhibiting higher concentrations of contaminants considering its location are that its volume is large so as to dilute any pollutant concentrations and that it is flushed by frequent rains and area flooding.

Site sediments were sampled during the original RI. Sediment samples in all four ponds showed contamination well above background. The sampling results are given in Table 4.

Surface Soils

Surface soils were analyzed during both RI investigations. Onsite surface soil concentrations are given in Table 5 and perimeter sample concentrations are given in Table 6. The onsite soil contamination is primarily located in the northern and northeastern portions of the site, just south of Pond A. The offsite soil sampling results from the Supplemental investigation are as follows:

Location East Depth	Site Perim. 0"-6"	+50 ft. East 0"-6"	+50 ft. East Dup. 0"-6"	+100 ft. East 0"-6"	+200 ft. 0"-6"
Hexachlorobutadiene	220J	--	--	--	--
Hexachlorobenzene	5100	300J	280J	220J	330J
Hexachloroethane	--	--	--	--	--
Beta-BHC	--	--	--	--	--

Notes

All values in parts-per-billion (ppb)
J - estimated value

TABLE 4

CLEVE REBER SITE

SUMMARY LIST OF PARAMETERS IDENTIFIED
ONSITE SEDIMENT

Semi-Volatile Parameters	Number of Times Identified[1]	Range
2,4,6-trichlorophenol	1	1,500
pentachlorophenol	1	2,800
benzoic acid	1	11,000
1,2,4-trichlorobenzene	1	1,200
hexachlorobenzene	7	1,800-640,000
1,3-dichlorobenzene	3	10-15,000
1,4-dichlorobenzene	2	15-880
hexachlorobutadiene	5	25-5,400
N-nitrosodiphenylamine	1	5,100
benzo(b) fluoranthene	1	1,600
dibenzo(a,h) anthracene	1	1,400
aniline	1	1,400
dibenzofuran	1	4,100
Volatile Parameters		
chlorobenzene	3	22-21,000
toluene	3	LT-9,700

Notes:

1 - ten samples taken
1 units: ug/kg
LT below detection limit, but greater than 1/2 detection limit

TABLE 5

SUMMARY LIST OF PARAMETERS IDENTIFIED
ONSITE SURFACE SOIL

Semi-Volatile Parameters	Number of Times Identified[1]	Range
phenol	1	550
hexachlorobenzene	6	LT-110,000
1,2-dichlorobenzene	1	1,100
1,3-dichlorobenzene	1	11,000
N-nitrosodiphenylamine	2	740-7,600
aniline	3	3,900-47,000

Notes

1 - six samples taken
units: ug/kg
LT - below dector limits but greater than 1/2 detection limit

TABLE 6

CLEVE REBER SITE

SUMMARY LIST OF PARAMETERS IDENTIFIED
PERIMETER SURFACE SOIL

	Number of Times Identified[1]	Range
Semi-Volatile Parameters		
hexachlorobenzene[2]	1	1,300
Volatile Parameters		
1,1,1-trichloroethane	3	3.4-4.0

Notes:

1 - four samples taken
2 units: ug/kg
Q quantitated using secondary ion
2 QA problem data

The general findings are that significant soil contamination exists onsite but not offsite. The residential yard samples showed no site related contamination. Although samples taken east of the site indicated contamination as far out as 200' the levels are not significant from a health risk basis. ATSDR representatives have reviewed this data.

Groundwater

The subject of most concern and that which was investigated most thoroughly was groundwater contamination. A generalized geologic cross section of the Cleve Reber Site is shown in Figure 4.

The three major hydrogeologic units investigated were the Shallow Sand, the Deep Sand and the Norco Aquifer. According to the data collected there does not exist any contamination in either the Deep Sand or the Norco Aquifer. The Shallow Sand is, however, contaminated immediately beneath the site.

The objective of the supplemental investigation was to characterize contamination in the Shallow Sand. The concern was not that site contaminants were thought capable of migrating to the Norco, but that either of two other exposure scenarios might occur: 1) An individual could screen a well in this shallow zone sometime in the future and be exposed to contaminated groundwater, or 2) A poorly cased well through this zone to a deeper zone could allow contamination to enter the well through cracks, etc. and migrate downward to the deeper zone.

The supplemental groundwater investigation is described briefly in the following paragraphs:

This was the first time an attempt was made to collect and analyze field samples of these hexachloro compounds at the low ppt level. Positive readings were found to result from any of a number of QA/QC problems or actual contamination or a combination of both. In order to interpret the sampling results one must understand both the ubiquitous nature of the HCB compounds and the sensitivity of the ppt groundwater investigation.

As discussed in the Supplemental RI/FS Report, all of the contaminant concentrations found offsite could be attributed to either well installation procedures, well materials, decontamination methods etc.

The Supplemental RI also brought into question the quantitative reliability of the June 10, 1985, sampling results. Not only were these taken without benefit of a comprehensive QA/QC program, the wells themselves are thought to have leached low ppt concentrations of hexachloro compounds. The table below shows a comparison between the new stainless steel ultra clean wells (P-)(installed for the ppt investigation) and the standard PVC wells (W-) used for the original investigation (pre-January 86). Notice that, although these wells were placed side by side and also screened in the same zone, the concentrations in samples from the standard PVC wells are much higher.

Well Pair	Well No.	Year Installed	HCE (ppt)	HCBD (ppt)	HCB (ppt)
1	W-14	1985	ND	20	140
	P-6	1986	ND	ND	13
2	W-10	1985	42	400	490
	P-9	1986	16	70	20

The supplemental investigation indicated that no significant groundwater contamination migrated beyond the site boundaries. All concentrations of HCB detected in the ultra-clean wells, except for two samples, were below the 10^{-6} (21 ppt) risk criteria set, even considering the artifact contamination likely generated during the field work. The samples for P-7 (30 ppt) and P-8 (28 ppt) although above 21 ppt are also not considered significant. Taking into account their associated analytical QA/QC baseline concentrations (36 & 13 ppt respectively) both of these can be considered to be within the 10^{-6} health range. (Table 7)

The samples taken from the original PVC wells are suspect with regard to the magnitude of the detected concentrations. The high levels detected for some of the onsite samples suggest, that although not quantifiable, contamination from the site has migrated into the shallow sand.

Well	HCE (ppt)	HCBD (ppt)	HCB (ppt)
B-14	670	2,100	1,700
B-22	3,400,000	1,300,000	110,000

The conclusion that the Shallow Sand is contaminated beneath the site is substantiated by the subsurface soil investigation conducted during the Supplemental RI. Table 8 gives the concentrations of HCB, HCBD and HCE from the base of the waste pit to 30 feet (top of the Shallow Sand). The analyses of these two borings (locations shown in Figure 6) coupled with the sampling results of the onsite PVC wells, indicate that the contaminants have migrated to the Shallow Sand aquifer.

Where earlier tests had indicated that the clay formation immediately underlying the waste pit was very impermeable, these analytical results show differently. Close visual inspection of the borings show root holes slickensides, sand lenses, and other secondary permeability features. In-place and lab permeability test gave erroneous results to the extent that they did not adequately identify the clay's mass permeability.

Summary

The primary hazards to human health are associated with direct contact/ ingestion of onsite surface soils, sediments, onsite surface water (Ponds B & D), onsite leachate and groundwater within the Shallow Sand beneath the site.

TABLE 7
CLEVE REBER SITE
SHALLOW SAND SAMPLE RESULTS

Monitoring Well	Date	HCE (ppt)	HCBD (ppt)	HCB (ppt)	HCB Baseline Concentration (ppt)
P-1	1/29	1U	1U	18	14
P-1	2/05	1U	1U	14	14
P-1	4/09	1U	1U	9	13
P-2	2/03	1U	1U	10	14
P-3	2/02	1U	1U	10	14
P-4	2/02	1U	1U	10	14
P-5	2/04	1U	1U	7	14
P-6	2/04	1U	1U	13	14
P-7	4/13	2	2	30	36
P-8	4/11	3	16	28	13
P-8	4/20	3	6	12	50
P-9	4/15	16	70	20	12
P-9	4/15 (dup)	33	113	20	12
P-10	4/17	3	11	13	12
W-10	1/19	1U	660	890	-
W-10	1/19 (dup)	1	520	800	1U
W-10	4/15	42	400	490	1U
W-10	4/15 (dup)	44	390	470	12
W-12	1/19	1U	100	1,100	12
W-14	1/20	1U	25	440	1U
W-:	1/20 (dup)	1U	19	340	1U
W-14	2/04	1U	20	140	1U
W-16	1/20	1U	7	69	14
					1U

Notes:

U - Compound was analyzed for but not detected. Reported with the detection limit value.

HCE - hexachloroethane
HCBD - hexachlorobutadiene
HCB - hexachlorobenzene

TABLE 8
CLEVE REBER
CONTAMINANTS DETECTED IN SOIL
BENEATH WASTE PIT

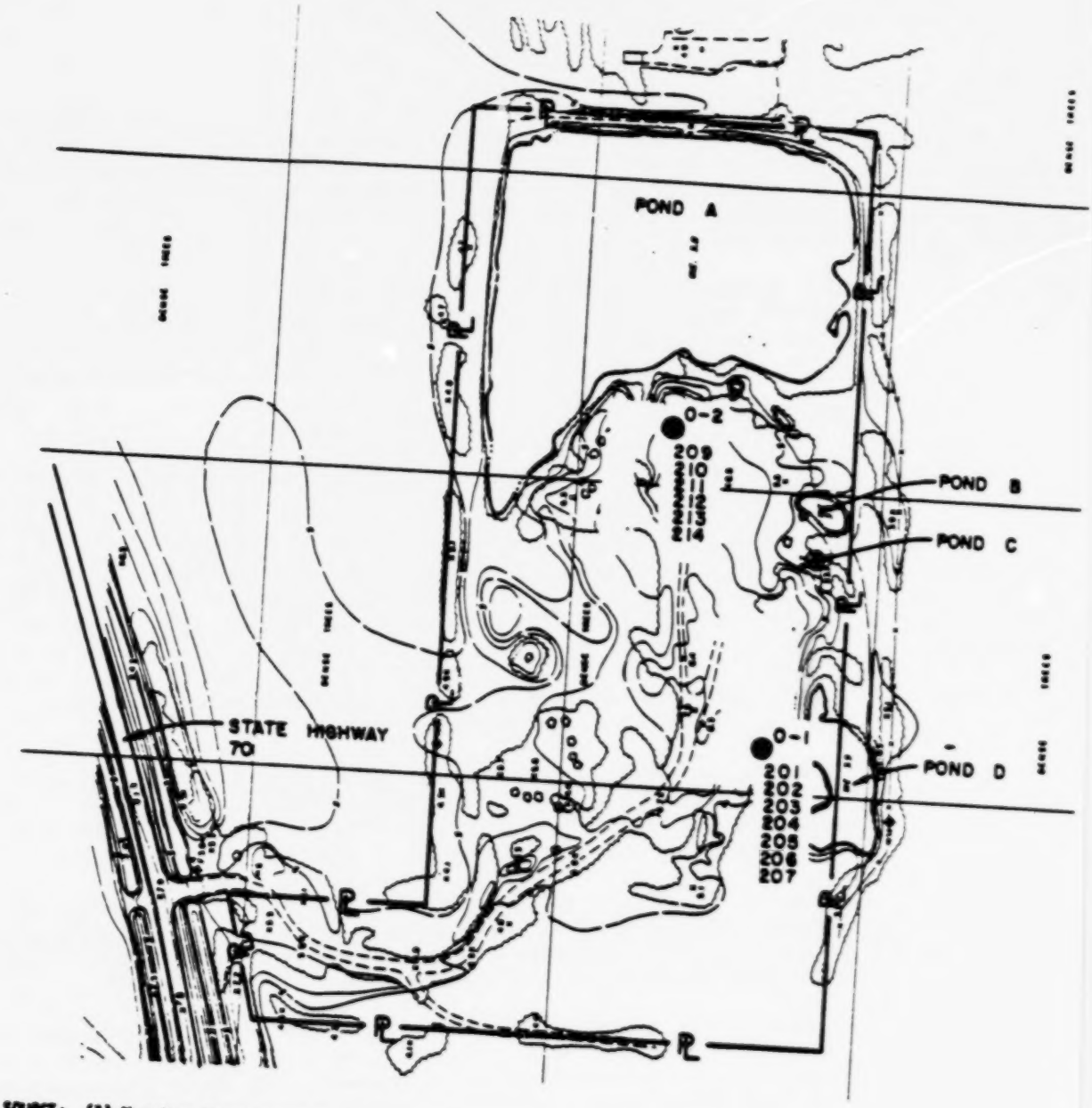
Sample No.	201	202	203	204	205
Location	0--1	0--1	0--1	0--1	0--1
Depth	18-20 ft.	20-22 ft.	22-24 ft.	24-26 ft.	26-28 ft.
1,2-Dichloroethane	4400	3200	2900	2700	--
1,1,2,2-Tetrachloroethane	--	--	--	--	--
Trichloroethene	--	--	--	--	--
Tetrachloroethene	--	--	--	--	--
Hexachlorobenzene	--	--	--	--	--
Hexachloroethane	--	--	--	--	--
Hexachlorobutadiene	--	--	--	--	--
Hexachlorocyclopentadiene	--	--	--	--	--

Sample No.	209	210	211	212	213	214
Location	0--2	0--2	0--2	0--2	0--2	0--2
Depth	18-20 ft.	20-22 ft.	22-24 ft.	24-26 ft.	26-28 ft.	28-30 ft.
1,2-Dichloroethane	--	--	--	--	--	--
1,1,2,2-Tetrachloroethane	--	1600J	--	--	--	--
Trichloroethene	--	1600J	--	--	--	--
Tetrachloroethene	8400	7500	9100	28000	1400	53000
Hexachlorobenzene	3200	8600J	33000	2700	--	60000J
Hexachloroethane	29000	38000	196000	7900	23000	470000
Hexachlorobutadiene	2900	--	1100000	100000	170000	5600000
Hexachlorocyclopentadiene	26000	48000	21000	--	--	630000

Notes

All values reported in parts per billion (ppb)

-- Not detected
J Estimated value. Detection limits for undetected compounds may be found in Appendix E.



SOURCE: (1) Martinez Mapping and Engineering
Date of Photography: April 23, 1984.
Scale: 1" = 100'

LEGEND

● 0-1 ONSITE BORING NUMBER
201 SOIL SAMPLE NUMBER

N

0 250
125
SCALE IN FEET

FIGURE 6
ONSITE TEST BORING AND SUBSURFACE SOIL SAMPLE LOCATIONS
CLEVE REBER SITE SUPPLEMENT

The exposure route of most concern is the Shallow Sand. Although hazardous substances have reached this zone, they have not migrated beyond the general facility boundaries. The reason contamination is not quickly spreading in the groundwater is due to the low mobility of the compounds of concern (HCB, HCBD, HCE) have in the local geologic formations.

The reason for concern with the Shallow Sand, as stated earlier, has to do with potential future exposure scenarios. Continued contaminant migration coupled with the installation of a shallow or poorly cased water well adjacent to the site could cause an unacceptable exposure.

ENFORCEMENT

The site was originally a disposal facility for municipal wastes. Environmental Controls Company (E.C.C.), with Cleve Reber as president, initially leased the property from Elmyra Landry Bishop, C. J. Bishop, and Lydia Landry St. Amant, the landowners, in August 1970. On the same date E.C.C. intered into a contract with Ascension Parish to operate the site as a Santiary landfill. The contract allowed for the disposal of both municipal and industrial wastes. During the period from 1970 to 1974, both municipal and industrial wastes were received at the site. The site was abandoned in 1974, leaving behind various buried hazardous substances, surface drums, and chemical waste piles and contaminated soil and surface water.

Vernon Schexnaydre purchased the property from the previous owners on November 12, 1976. On April 19, 1979, after sampling efforts by the Louisiana Department of Natural Resources, Louisiana Governor Edwards requested immediate steps be taken to secure the Cleve Reber site.

On March 14, 1980, a suit was filed by the State of Louisiana against Environmental Controls Company of Louisiana, Inc., Elma Landry Bishop, C. J. Bishop, Lydia Landry St. Amant, Vernon J. Schexnaydre, Cleve Reber and the generators of hazardous and toxic wastes.

In March 1983, the EPA issued notice letters to all known potentially responsible parties (PRPs). Vulcan Materials, Uniroyal and Mono Chem (subsidiary of Borden) identified themselves as waste generators for the Cleve Reber site. These PRPs participated in the EPA emergency removal of July 1983. During this removal action the surface drums and chemical waste piles were removed and disposed of and a thin, temporary clay cap was placed over much of the site.

The above mentioned PRPs retained IT-D'Appolonia for technical assistance and oversight during the RI/FS (both original and supplemental). In a meeting held on March 18, 1987 they further expressed an interest in participating in remediation measures at the site.

ALTERNATIVES EVALUATION

The following are the remedial objectives developed during the RI process;

- Protect the Norco Aquifer from contamination from the site.
- Ensure that water users affected by potential contaminant migration from the site have a potable water supply.
- Minimize adverse effects from contaminated shallow groundwater.
- Minimize the effects of contaminated surface water run-off from the site.
- Prevent human or animal contact with contaminated onsite surface water.
- Prevent human or animal contact with contaminated soil and sediment and with onsite wastes.
- Minimize the potential of an air discharge that would adversely affect humans - during either investigative or remedial activities.

Under the Superfund Amendments and Reauthorization Act of 1986 (SARA) there are new requirements to be considered in addition to the requirements of CERCLA for selecting the most appropriate remedial action for implementation.

The major new provisions added to the law include a strong preference for permanent solutions and a requirement that all onsite remedial actions attain legally applicable or relevant and appropriate Federal and state standards, requirements, criteria or limitations (ARARs).

In addressing permanence and long-term effectiveness of remedial actions EPA must consider the following:

- long-term uncertainties of land disposal;
- goals and requirements of the Resource Conservation and Recovery Act (RCRA);
- persistance, toxicity, mobility and bioaccumulation of the hazardous substances of concern;
- short and long-term potential for adverse human health effects;
- long-term maintenance costs;
- potential threat to human health and the environment from the excavation, transportation, and redisposal, or containment of hazardous substances or pollutants or contaminants.

SARA establishes a preference for remedial actions that utilize treatment to permanently and significantly reduce the volume, toxicity, or mobility of hazardous substances. Offsite transport and disposal without treatment is the least preferred option where practicable treatment technologies are available.

The original RI/FS (May 1985) predated SARA. Although the Supplemental RI/FS also predated SARA, efforts were made to conform the FS to the anticipated language of SARA. Because of this, the supplemental FS succeeds in adequately reviewing and considering innovative and permanent technologies.

A number of potentially applicable remedial actions were studied for the Cleve Reber site. Combinations of technologies were identified and developed into alternative remedial actions. Treatment alternatives for source control actions were developed ranging from an alternative

that would eliminate the need for long-term management (including monitoring) at the site, to an alternative using, as a principal element, treatment that would reduce the toxicity, mobility, or volume of site waste as a principal element. A number of reasonable alternatives were considered within this range. In addition, two other alternatives were reviewed.

1) An alternative that involves containment of waste with little or no treatment, but provides protection of human health and the environment primarily by preventing potential exposure or by reducing the mobility of the wastes.

2) A no-action alternative.

The actual screening process for technology/alternative review was divided into two steps; initial screening and detailed screening. The initial screening or alternatives was conducted with the intent of:

1) preserving the most promising alternatives as determined by their likely effectiveness and implementability.

2) preserving for further analysis a range of alternatives consistent with the new SARA provisions.

Those technologies surviving the initial screening were further screened utilizing the following criteria:

1) Effectiveness. Alternatives were evaluated to determine whether they adequately protect human health and the environment; attain Federal and state ARARs or other criteria, advisories or guidance; significantly and permanently reduce the toxicity, mobility, or volume of hazardous constituents; were technically reliable, or were effective in other respects.

2) Implementability. Alternatives were evaluated as to the technical feasibility and availablity of the technologies each alternative would employ; the technical and institutional ability to monitor, maintain, and replace technologies over time; and the administrative feasibility of implementing the alternative.

3) Cost. The costs of construction and any long-term costs to operate and maintain the alternatives were evaluated.

The technology screening process was consistent with 40 CFR Part 300.68 (g) and draft guidance distributed pursuant to SARA.

Seven remedial alternatives were developed for detailed analysis and are summarized in Table 9. The table presents a review of the technical, environmental, public health, and institutional evaluations. The following scale was used to rate each of the selected remedial action:

Rating	Definition
--	Extremely negative
-	Moderately negative
0	Neutral effect
+	Positive
++	Very positive

The remedial alternatives are discussed below.

- Groundwater

Remedial alternatives to address groundwater were not analyzed in detail because no offsite groundwater contamination is thought to exist. Field study tests and literature reviews indicate that the contaminants of concern have a high affinity for the local organic clays. Considering a permanent source control remedial action, contamination currently beneath the site should disperse and attenuate below the 10^{-6} cancer risk factor. The goal of the groundwater evaluation was to ensure that the 10^{-6} cancer risk value was not exceeded down-gradient from the site. This will not occur if the source of contamination is properly addressed; pumping and treating would not be necessary.

The source of potential future groundwater contamination is the buried drummed and bulk wastes. The information provided by the PRPs indicates that as many as 6,400 buried drums exist on site. Test pit excavations during the RI noted that some still appear intact. If left in place, these will likely corrode and leak sometime in the future.

Although action alternatives were reviewed for possible groundwater remediation, none are justified if a source control remedial action is to be implemented.

If, however, the wastes are left in place, some type of long-term comprehensive slurry wall system including groundwater monitoring and pumping will likely have to be implemented.

- Source Control

Alternative No. 1 is a no-action alternative. It involves no additional work or monitoring at the site. There would be no mitigation of the hazards currently associated with the site as addressed earlier under Current Site Status. This is not consistent with the requirements of RCRA or SARA.

Alternative No. 2 involves the complete removal of all contaminated materials and returning the site to predisposal conditions. This alternative was developed to comply with the Resource Conservation and Recovery Act (RCRA). The RCRA land ban may affect the implementation of this remedy. Soil, sediment and waste cleanup levels would be health based. All significant contamination would be removed.

TABLE 9

CLEVE REBER SITE
SUMMARY OF REMEDIAL ALTERNATIVES

	Alt. No. 1 No Action	Alt. No. 2 Offsite Landfill (Complete)	Alt. No. 3 Onsite Vault	Alt. No. 4 Onsite Incineration Drum/Sludges	Alt. No. 5 Offsite Incineration Drum/Sludges	Alt. No. 6 Offsite Incineration (Complete)	Alt. No. 7 Onsite Incineration Drum/Sludges
Evaluation Criteria							
Performance	--	+	-	+	+	++	++
Reliability	-	+	+	+	+	++	++
Implementability/ Constructability	o	-	+	+	+	--	o
Public Health	--	+	+	+	+	++	++
Environmental	--	+	+	+	+	++	++
Cost (Millions)							
Capitol	0	80	10	25	30	290	85
O&M Cost (Annual)	0	0	.1	.1	.1	2.7	6.9
Time to Achieve (yrs)	0	1.5	.75	1.5	1.5	6-7	9-12

The first step of this remedial alternative would involve draining Pond A. Water currently in this pond contains no contaminants at levels requiring treatment and can be discharged directly into the Panama Canal. Direct discharge of the water would require the construction of a slurry wall along the southern edge of Pond A to hydraulically separate the pond from the waste and leachate in the pit to prevent water quality degradation. (This hydraulic connection has been verified by test pit excavations). However, if leachate were found to be adversely affecting the water quality of Pond A during pumping. the water would be treated in an onsite treatment plant prior to discharge. Pond C is also considered uncontaminated and its contents would be discharged directly to the Panama Canal. The quality of these discharges would be monitored to assure that Clean Water Act (CWA) dicharge standards are not exceeded.

The other onsite liquids to be disposed of include the water in Ponds B and D, the leachate that would drain from the excavated wastes, and the leachate remaining in the pit after the wastes were removed. These liquids would be treated and discharged in compliance with the Clean Water Act (CWA). Once the site is dewatered the old borrow pit and drum disposal area would be excavated.

The drummed wastes and bulk sludges buried onsite would be incinerated onsite in a mobile incinerator. (As part of this process the excavated wastes would have to be characterized. If a significant volume of inorganic material were found, this would have to be treated (solidified) and then transported offsite). The landfilled materials and contaminated soil including sediments would be excavated and transported to an appropriate disposal facility. The excavated areas would be backfilled with clean, uncontaminated soil and graded to provide drainage that would approximate pre-development conditions. The entire site would also be revegetated.

The majority of the waste and soils excavated would be saturated based on the water level data obtained at the test boring locations and observations during test pit excavations. These materials would be allowed to drain and would be stabilized and solidified prior to transporting them offsite. As with the water in the ponds, the drained leachate would be treated to remove organic contaminants and discharged to the Panama Canal.

This alternative is protective of both public health and the environment. All ingestion and direct contact hazards would be eliminated, and the source of potential future groundwater contamination would be removed.

This corrective action could allow for significant future development due to the removal of the site contaminants. The estimated cost of this alternative is $80 million.

Alternative No. 3 is an onsite closure intended to minimize or eliminate the migration of contaminants from the site. No wastes are removed, treated or destroyed. This alternative attains all applicable Federal standards and guidance for closure in compliance with RCRA.

The first stage of the remedial action would be the elimination of Pond A. Again, it is necessary to remove Pond A because it is hydraulically connected to the waste and leachate within the waste pit, providing an outlet for contamination to enter the environment. It would be drained as previously discussed.

Whereas it is not anticipated to treat the surface water from ponds A and C, the water from Ponds B and D would be treated (sedimentation and precipitation - including aeration and carbon absorption) and discharged to the Panama Canal in accordance with the CWA. Once this was completed ponds (A, B, C and D) would be backfilled with uncontaminated fill.

The interior of the site would be graded, crowned at the center and sloped to drain toward the perimeter at a minimum gradient of 1%. The grading would maintain drainage while allowing for settlement due to the compression of the underlying waste. The grading would prevent offsite surface water from coming onto the site and rainfall falling on site would drain off with only short onsite contact times.

The site would be closed by installing a multilayer cap with gas venting pipes. The cap would be constructed of 24 in. of topsoil overlying a filter geotextile which overlies a 12 in. drainage layer overlying 24 in. of compacted clay. The 2 ft. thick clay layer would not be placed over the backfilled Pond A since the pond would be backfilled with up to 15 ft. of clay. The placement of this cap would result in the top of the cap being above the 100 year flood level. This type of cap was selected to satisfy RCRA specifications. The topsoil would be revegetated with grass for erosion protection. The topsoil is provided to reduce the intrusion of roots into the underlying layers of the cap. (Since information on the landfilling operation indicates that the hazardous wastes were segregated from the municipal wastes a cap over the whole site may not be necessary, but only over the area known to contain buried wastes).

The soil cap would reduce the risks associated with contact with contaminated surface soils and sediments. Additionally, the cap would reduce the amount of water infiltration into the waste pit as compared to the existing soil cover. Passive gas vent pipes would be installed through the cap to reduce the build up of gas beneath the cap. Vented gases would be treated with carbon canisters, and periodic air sampling would be performed to evaluate the need for continued or additional treatment.

All wastes would be left in place and capped. This alternative minimizes the direct contact and ingestion threat associated with the site. The potential for future groundwater contamination would continue, however.

A new fence would be constructed around the site and maintained to reduce unauthorized site access. Additionally, both deep and shallow groundwater would be monitored for 30 years after site closure. This alternative would limit site development since contaminated materials would remain on site. The estimated cost of this alternative is $10 million.

and ingestion threat would be eliminated and since the source of groundwater contamination is destroyed, no future threat would exist. Both alternatives were designed to comply with RCRA.

All of the alternatives discussed are presented in tabular form in Table 9. As discussed earlier, all were reviewed with regard to effectiveness, reliability, permanence and cost effectiveness. Time to achieve was also considered.

It should be noted that incineration (thermal destruction) was selected as the most reliable permanent treatment method for the drummed and bulk wastes. During the technology review conducted for both the original and supplemental FS thermal destruction was considered the only reliable technology for the permanent destruction of the site wastes.

COMMUNITY RELATIONS

See Appendix B

CONSISTENCY WITH THE PROVISIONS OF SARA

The selected alternative must be consistent with the provisions of SARA. The major impacting provisions have been stated earlier in the Alternative Evaluation section. The selected remedial action will be permanent and effective in protecting public health and the environment.

The term permanent is defined as an alternative's ability to significantly reduce a waste's mobility, toxicity and volume. Treatment technologies are preferred.

SARA also requires that the selected remedy comply with all Federal and State ARARs except under specific conditions. This will be discussed in the next section (Compliance With Other Environmental Laws).

The alternatives reviewed that are most impacted by SARA are alternatives nos. 1 through 3. Alternative no. 1 (no action) does not comply with SARA in that it is not protective of human health and the environment. Current onsite exposure risks and more importantly potential future groundwater exposure risks, are not addressed.

Complete offsite disposal of contaminated landfill material and onsite incineration of drummed wastes (alt. no. 2) does comply with SARA. It is a remedy to be less preferred, however, to one that does not involve offsite transportation. Although the drummed wastes would be permanently destroyed and the wastes significantly reduced in volume, toxicity and mobility; the offsite transport of the contaminated landfill material could result in future problems at another location.

Alternative no. 3, onsite cap and slurry wall, does not meet the perference for a permanent remedy in SARA. It does, however, comply with ARARs. The wastes left in place could leach into the environment sometime in the future. The site would have to be maintained, operated

Alternative No. 4 incorporates all of the actions of alternative no. 3 with the additional measure that the buried drums and bulk sludges would be excavated and their incinerable contents destroyed in an onsite mobile incinerator (mobile thermal destruction unit). Nonincinerables (notably mercuric sulfide) would be solidified and likely landfilled onsite. The drums and sludges would be excavated to prevent them from contributing to future groundwater contamination. By removing the source of groundwater contamination, the future exposure impacts associated with the site would be minimized. Considering the slow groundwater movement and the high affinity that HCB has for the native organic clays, groundwater pumping and treatment would not be necessary. Remnant contamination will not create a problem as long as the source of additional contamination is removed.

Contaminated soils and sediments would remain onsite. All of the surface ponds (A, B, C and D) would be eliminated and backfilled, the site would be graded, and the same multi-layer cap system proposed for alternative no. 3 would be installed. A fence would be installed to prevent unrestricted site access and groundwater monitoring would be performed for a 30 year period following closure. Direct contact hazards and ingestion risks are addressed wi the RCRC cap. The potential for future groundwater contamination is mitigated by the excavation and destruction of the drums and bulk sludges. This alternative complies with applicable Federal standards and guidance and with RCRA closure requirements. Future site development would be restricted to ensure the integrity of the remedial action. The cost of this alternative is estimated to be $25 million.

Alternative No. 5; As part of alternative no. 4 both onsite and offsite incineration of the drums and bulk sludges was reviewed. Alternative no. 4 is onsite incineration and alternative no. 5 is offsite incineration. All pathways of exposure are handled as for alternative 4. This alternative is considered a long-term and permanent remedy. Although site development would be restricted due to the remnant contamination left onsite, no significant migration of contaminants is expected. The estimated cost of this alternative is $30 million.

Alternative No. 6 and No. 7 were developed as part of the Supplemental RI/FS (September 1986). The intent was to develop a high end cost of complete and permanent alternatives. Both entail complete excavation of all buried and landfilled wastes, and either onsite or offsite incineration.

Alternative no. 6 includes offsite incineration; alternative no. 7, onsite incineration of all site wastes including contaminated soils, sediments, municipal refuge, drummed wastes and bulk wastes. Both include all relevant components of alternative 2. All ponds would be discharged (treated in accordance with the CWA) and backfilled, the pit would be backfilled and the site ultimately returned to predisposal conditions. All pathways of exposure are addressed. The direct contact

and ingestion threat would be eliminated and since the source of groundwater contamination is destroyed, no future threat would exist. Both alternatives were designed to comply with RCRA.

All of the alternatives discussed are presented in tabular form in Table 9. As discussed earlier, all were reviewed with regard to effectiveness, reliability, permanence and cost effectiveness. Time to achieve was also considered.

It should be noted that incineration (thermal destruction) was selected as the most reliable permanent treatment method for the drummed and bulk wastes. During the technology review conducted for both the original and supplemental FS thermal destruction was considered the only reliable technology for the permanent destruction of the site wastes.

COMMUNITY RELATIONS

See Appendix B

CONSISTENCY WITH THE PROVISIONS OF SARA

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The term permanent is defined as an alternative's ability to significantly reduce a waste's mobility, toxicity and volume. Treatment technologies are preferred.

SARA also requires that the selected remedy comply with all Federal and State ARARs except under specific conditions. This will be discussed in the next section (Compliance With Other Environmental Laws).

The alternatives reviewed that are most impacted by SARA are alternatives nos. 1 through 3. Alternative no. 1 (no action) does not comply with SARA in that it is not protective of human health and the environment. Current onsite exposure risks and more importantly potential future groundwater exposure risks, are not addressed.

Complete offsite disposal of contaminated landfill material and onsite incineration of drummed wastes (alt. no. 2) does comply with SARA. It is a remedy to be less preferred, however, to one that does not involve offsite transportation. Although the drummed wastes would be permanently destroyed and the wastes significantly reduced in volume, toxicity and mobility; the offsite transport of the contaminated landfill material could result in future problems at another location.

Alternative no. 3, onsite cap and slurry wall, does not meet the perference for a permanent remedy in SARA. It does, however, comply with ARARs. The wastes left in place could leach into the environment sometime in the future. The site would have to be maintained, operated

and monitored for perpetuity. Wastes would not be reduced in mobility, toxicity or volume but only encapsulated. Considering the persistence and toxicity of the onsite wastes, this is not a preferred alternative.

Alternatives 4 through 7 do comply with the intent and the preferences of SARA. Alternatives 4 and 5 propose the excavation and incineration (onsite and offsite respectively) of all drummed wastes and bulk sludges, the removal of all ponds, and the backfilling and capping of the site. Both alternatives significantly reduce the waste's mobility, toxicity and volume. Considering the local hydrogeology and also the high affinity the hexachloro compounds have shown for the area clays, the residual contamination left in place (soils, sediment and municipal refuge) is not expected to migrate and present any significant future human health or environmental risk.

Comparing alternatives 4 and 5 without regard to cost, (although the estimated cost of alternative 5 is $5 million more than alternative 4) onsite incineration appears to more suitably comply with SARA considering the risk involved with the offsite transportation of the hazardous materials. This was reviewed because of SARA's requirement to consider the potential threat to human health and the environment from the excavation, transportation, and redisposal or containment of hazardous substances or pollutants or contaminants.

Alternatives 6 and 7 propose the excavation and incineration (offsite and onsite respectively) of all landfilled wastes, including the municipal refuse that has been contaminated with leachate. Ponds would be drained and backfilled, but the site would not need a cap. Both alternatives return the site to predisposal conditions. Wastes would be permanently destroyed.

As discussed for alternatives 4 and 5, alternative 7 (onsite incineration) is preferred to alternative 6 (offsite incineration) because of the increased public health and environmental risks associated with the offsite transportation of hazardous contaminants. As stated in the earlier section, all reviewed alternatives would be designed to attain ARARs.

CONSISTENCY WITH OTHER ENVIRONMENTAL LAWS (ARARS)

As part of the FS process, applicable and relevant Federal, state and local regulations and laws (ARARs) were reviewed (Appendix C). The final alternative selected will attain ARARs.

During the course of the investigative work, and also during the development of the RI/FS, the EPA coordinated with both the Army Corps of Engineers (COE) Kansas City and the Louisiana Department of Environmental Quality.

The United States Geologic Survey (USGS) and the COE out of New Orleans were also used as sources of information. Coordination with these groups helped ensure that local, state, and other Federal regulations and concerns were addressed. The environmental laws that are of most relevance are discussed below:

- Executive Order 11988 - Floodplain Management

The perimeter of the Cleve Reber site is within the 100-year floodplain of lake Maurepas and Lake Pontchartrain. Considering the vast floodplain envisioned, none of the remedial works studied will have any adverse affects on the area floodplain. The site would be vegetated to prevent erosion, and any construction designed against washout by the 100-year flood.

- Executive Order 11990 - Protection of Wetlands

According to an evaluation given by the New Orleans District of the COE, the area surrounding the site may possibly fall within the "special case" bottomland hardwood category of wetlands. The site itself, however, represents a heavily disturbed area which does not exhibit the characteristics of a wetland. It is the COE's determination that the Cleve Reber site does not fall within the category of wetlands regulated under Section 404 of the Clean Water Act. During site remediation activities, care will be taken to minimize any adverse affects to surrounding wetlands.

- Clean Water Act

Another environmental law that impacts site corrective actions will be the Clean Water Act (CWA). CWA discharge standards will be adhered to for any water or leachate discharge.

- Resource Conservation and Recovery Act (RCRA)

The environmental law that impacts the site the most is RCRA. RCRA requires [in part] that at the final closure of a hazardous waste landfill, the site be capped with a final cover designed to provide long-term minimization of liquids through the closed landfill, function with minimum maintenance, to promote drainage and to minimize erosion, etc. RCRA guidance documents suggest a multi-layered cap that has a permeability less than or equal to the bottom of the landfill. RCRA further requires, assuming that groundwater contamination is not present, that the groundwater be monitored for a thirty-year period to ensure the adequacy of the closure.

In addition to the above, RCRA requires that groundwater contamination beyond the point of compliance be cleaned up to background, a maximum concentration limit (MCL), or an alternate concentration limit (ACL). The 'point of compliance' (§264.95) is defined as a vertical surface located at the hydraulically downgradient limit of the waste management area that extends down into the uppermost aquifer underlying the regulated units. The point of compliance at the Cleve Reber site is considered the facility property line.

RCRA requirements that have applicability for offsite transportation of hazardous wastes are the manifesting requirements and the statutory land ban of specified wastes. Any waste transported offsite will be

in compliance with Subpart B through D of §262 and Subpart E of §264 (Manifest System, Pre-Transport Requirements, Record Keeping and Reporting).

- State Laws/Regulations

The Louisiana Department of Environmental Quality was requested, in a letter dated January 1987, to inform the EPA of any State or local ARARs that could affect the implementation of the remedial action. After numerous meetings and phone conversations, the state has not identified any regulatory or statutory concerns other than those already identified and established by EPA. Their written concurrence with the proposed remedy, (located in Appendix D) is taken as concurrence on and acceptance of the ARARs discussion given in this document.

- Offsite Policy

The EPA's Offsite Policy (FR Nov. 5, 1985, pgs. 45933-45937) essentially requires that any offsite disposal facility selected to receive Superfund wastes be in compliance with RCRA, have been inspected within 6 months and not have any significant violations of applicable environmental laws.

SARA reiterates the intent of the Offsite Policy.

Summary:

All of the seven alternatives studied comply with the provisions of the Federal policies on floodplains and wetlands and also the requirements of the CWA. (The no action alternative may violate CWA standards due to surface migration). RCRA appears to be the most pertinent law that needs to be addressed.

Each alternative is discussed below with respect to its compliance with RCRA, SARA and if appropriate, the Offsite Policy.

1) The no action alternative does not comply with RCRA (nor does it comply with CERCLA/SARA). The site is not properly closed, and site contaminants are allowed to migrate.

2) The removal of site contaminants/materials and returning the site to predisposal conditions is designed to comply with RCRA. The RCRA land ban, however, may affect this remedy. This alternative also does not meet the preference, stated in SARA, for not transporting untreated wastes offsite since untreated material would be transported offsite for disposal. This alternative does, however, significantly the reduce mobility, toxicity and volume of the wastes.

   Offsite disposal (if allowed pursuant to the land ban) would be to a facility in compliance with the Offsite Policy.

3) The onsite closure alternative complies with all of the closure and post-closure requirements of RCRA. It does not meet the SARA preference for a permanent remedy. Wastes would be left in place

and not treated. The necessary long-term/perpetual maintenance required brings into question the appropriateness of this remedy.

4,5) The onsite closure with drum and bulk sludge incineration complies with all of the applicable requirements of RCRA and SARA.

For offsite incineration, the wastes would be manifested to a facility in compliance with the Offsite Policy.

6,7) Complete incineration of all onsite wastes is also in full compliance with the provisions of RCRA and SARA.

Offsite waste transport for alternative 6 will comply with RCRA regulations and also the Offsite Policy.

In addition to the above, all Federal and state ARARs would be adhered to. Specifically, the incinerators will be designed, constructed and operated to meet all air emission and burn effeciency standards and regulations.

RECOMMENDED ALTERNATIVE

Section §121 of SARA adds a new section to CERCLA that establishes a variety of requirements relating to the level of cleanup for remedial actions under CERCLA. This section codifies many of the existing requirements under the National Contingency Plan (NCP), but also establishes additional directives for selecting permanent remedies and for meetings state requirements (ARARs).

The basic requirements for a selected remedy are that the remedial actions be:

1) Protective of human health and the environment;
2) Cost effective;
3) In accordance with the NCP;
4) In accordance with new SARA provisions, ie; permanent solutions to the maximum extent practicable, ARARs and least preference for offsite disposal of untreated wastes and ARARs.

Considering the current and potential site hazards, and also taking into account the somewhat unique hydrogeology of the area, the recommended alternative is alternative 4; onsite incineration of drummed wastes and bulk sludges, in combination with the removal and backfilling of all ponds and finally a RCRA cap over that portion of the site containing residual contamination. The cap is not expected to cover the whole site, but only that area that was used for the disposal of industrial/ hazardous waste.

A specific groundwater remedial plan is not necessary since the source of future groundwater contamination will be removed. In doing so the mobility of the contaminants and their potential future volume will be greatly reduced.

An important step in this remedy will be the characterization of those wastes to be excavated. According to information supplied by the PRPs a small percentage of the waste disposed of at the site was mercuric sulfide. This material will not be incinerated but will be solidified and likely landfilled onsite. The solidification process will ensure a treated waste that will not be identified as hazardous according to RCRA's characteristic tests, i.e., EP Tox and TCLP.

The site will be monitored for a period of 30 years (post-closure time period stipulated under RCRA) to ensure that no significant contaminant concentrations migrate from the site. If however, future migration does occur appropriate remedial actions will be taken.

This alternative is protective and cost-effective, attains ARARs, and utilizes permanent solutions and treatment technologies to the maximum extent practicable.

The idea behind this remedy is to remove the source of future groundwater contamination. By excavating and incinerating the drummed and bulk liquid wastes and sludges there would be a significant reduction in the contaminant's mobility, toxicity and volume. The residual contamination left in place will be adequately attenuated and absorbed by the local organic clays so as to mitigate any potential future impact. Both field tests and literature studies support this conclusion.

The onsite incinerator will be state-of-the-art and will meet all applicable state and Federal requirement (ARARs).

The reasons for the elimination of the other remedies are as follows:

Alt. No. 1; The no-action alternative is not protective of public health and the environment. It does not meet the intent of RCRA or SARA.

Alt. No. 2; Alternative 2 was originally developed to comply with RCRA. In view of the RCRA land ban requirements, however, this alternative may violate the ban. This alternative significantly reduces mobility, toxicity and volume, by removing untreated waste offsite for disposal. This does not meet the preference for not transporting untreated wastes offsite under SARA. In addition it is much more expensive than other alternatives that provide a comparable level of cleanup (alt. 4 and 5).

Alt. No. 3; This alternative, although it does comply with RCRA, does not meet the permanence preference of SARA. Onsite closure is not a permanent remedy. The wastes are not significantly reduced in mobility, toxicity or volume.

Alt. No. 5; This is the same as alternative 4 except it calls for offsite incineration of the drummed wastes and bulk sludges. This alternative complies with RCRA and SARA. It was screened

out in favor of alternative 4 due to both potential increased human exposure (offsite transportation) and cost-effectiveness. Offsite incineration does not offer any increase in protection for human health and the environment, yet it costs approximately $5 million more.

Alt. No. 6; Complete excavation and offsite incineration of all wastes complies with RCRA and also meets the definition of a permanent remedy under SARA. The alternative, however, is not cost-effective. Although it theoretically provides 'better' long-term protection of human health and the environment than alt. no. 4, the significant increase in estimated cost ($290 million vs $25 million) is not commensurate with the relatively small increase in environmental benefit.

Alternative 4 provides a permanent and safe solution to the hazardous waste problem. To even say that alt. no. 6 is more protective is misleading. The difference is that alt. 4 leaves residual contamination in place and no. 6 does not. No. 4 utilizes the fortunate hydrogeology and physical/chemical properties of the site and surrounding soils to allow residual contaminants to remain in place and not create a future health or environmental threat. In addition, this alternative poses an exposure threat due to offsite transportation risks.

Alt. No. 7; This is the same alternative as no. 6 except it entails onsite incineration. The remedy is also not cost-effective in that it is estimated to cost $85 million. As just stated, the increase in cost does not justify its neglible increase in environmental protection.

OPERATION AND MAINTENANCE (O&M)

Project operation and maintenance will include a monitoring well sampling and analysis program, and site and cap maintenance including the maintaining and replacement of the passive gas vent filters. Gas vents are included since the cap is expected to be covering at least a portion of the old municipal landfill. Municipal landfills normally produce gases such as methane. (The appropriateness of this will be locked at more closely in the Remdial Design. Since it is thought that the hazardous wastes were segregated from the municipal wastes during disposal this may not be necessary). The site cap maintenance will entail the inspection of the surface vegetation and cap and also the periodic repair of the perimeter fence. The State of Louisiana will have the responsibility for O&M for a period of at least 30 years beyond this time.

The current source of funds for matching remedial actions at Superfund sites in Louisiana is the Hazardous Waste Site Clean-Up Fund (Section 1149, Title 30). This fund, which currently has a $2 million dollar cap, is available to the state to match Superfund actions. The Hazardous Site Clean-Up Fund collects money from civil penalties and cost recovery

APPENDIX A

efforts. The LDEQ is lobbying to get the $2 million ceiling raised.

SCHEDULE (Planned)

- Approve Remedial Action (sign ROD)	March 1987
- Complete Enforcement Negotiations	March - May 1987; ongoing
- Procure funds for the EPA zone contractor to conduct the study (Assuming the PRPs do not take over)	April 1987
- Start Design	June - July 1987
- Complete Design	February - July 1988
- Procure funds to have EPA contractor construction oversight	April - August 1988
- Start Construction	September - October 1988
- Complete Construction (1.5 yrs)	November - March 1991

FUTURE ACTIONS

No future remedial actions are anticipated. The selected remedial action is considered permanent. If, however, significant unforeseen offsite contamination occurs as a result of the site, appropriate remedial measures will be taken.

As stated under the O&M section, the site will be monitored for at least 30-years to ensure the reliability of the implemented remedial action.

SARA also states that if an alternative results in any hazardous substances, pollutants, or contaminants remaining on site, the remedial action shall be reviewed at least every five years to assure that human health and the environment is being adequately protected.

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Agency for Toxic Substances
and Disease Registry
Atlanta GA 30333

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March 31, 1987

MEMORANDUM

SUBJECT: Cleve Reber Remedial Evaluation from the Agency for Toxic Substances and Disease Registry

FROM: Carl Hickam, Senior Public Health Advisor
Agency for Toxic Substances and Disease Registry

TO Stephen A. Gilrein, Chief
ALONM Remedial Section (6H-SA)

The Region VI office of the U.S. Environmental Protection Agency has requested the Agency for Toxic Substances and Disease Registry (ATSDR) to review and comment on the proposed alternative at the Cleve Reber Site in Sorrento, Louisiana. After careful review of the data from this site the following findings, comments and recommendations regarding this proposed cleanup alternative are provided by the scientific staff of the Agency for Toxic Substances and Disease Registry.

During combustion of chlorinated organic compounds the potential exists for production of dioxions and furans, the agency recommends that some form of control technology needs to be incorporated to minimize the release of dioxins/furans into the environment. This capability could be demonstrated by a test burn of contaminants from the Cleve Reber site. After completion of a trial burn the Agency for Toxic Substances and Disease Registry will, if requested, review these findings and provide comments regarding any public health significance.

As the result of Hydrochloric Acid being produced by Chlorinated Compounds it is our opinion that control of this acid material would be necessary to protect the public health.

With the above recommendations incorporated and demonstrated ATSDR agrees with Region VI's plan for onsite destruction of the contaminated material from the Cleve Reber site.

ATSDR appreciates the opportunity to comment on the proposed remedial action at this site.

3. United States Geological Survey 7.5' Topographic Map, Sorrento Quadrangle, Louisiana, dated 1962, photorevised 1980.

4. Supplemental Report to Cleve Reber Site, Remedial Investigation and Feasibility Study, Volume 1, September 30, 1986; CH_2M Hill.

5. Supplemental Report to Cleve Reber Site, Remedial Investigation and Feasibility Study, Volume 2, September 30, 1986; CH_2M Hill.

6. Public Health Evaluation, Cleve Reber Site, Ascension Parish, Louisiana, September 30, 1986; CH_2M Hill.

7. Site Status Summary, 5 pages, dated September, 1986; provided by George Pettigrew, ATSDR, Region VI.

8. Remedial Investigation Report, Cleve Reber Site, Ascension Parish, Louisiana, Volumes 1 and 2, May 30, 1985; CH_2M Hill.

9. Feasibility Study Report, Cleve Reber Site, Ascension Parish, Louisiana, May 30, 1985; CH_2M Hill.

BACKGROUND

The Cleve Reber Site is an abandoned 24.6 acre landfill, with one (1) large pond (10-12 acres) and three (3) smaller ponds (approximately one acre total). The site is located in Ascension Parish, Louisiana, approximately 30 miles south-southeast of Baton Rouge and approximately 2 miles southeast of Sorrento. The area surrounding the site is sparsely settled with 25 residences located within one-half mile to the north and west of the site and a canal (Panama Canal) located within 1000 feet to the south and west of the site. The site has a slight slope from the north to the southeast. The Panama Canal drains into an extensive swamp located southeast of the site.

The site, originally used as a borrow pit for bridge and highway construction, was permitted in 1970 for disposal of municipal wastes. The facility was leased to Environmental Controls Company (Cleve Reber, President) and subsequently used for disposal of both municipal and industrial wastes from 1970 until it was abandoned in 1974.

An emergency surface cleanup was conducted by the USEPA during July 1983, resulting in the removal of chemical waste piles and approximately 1000 drums. It is estimated that 6500 drums remain buried at the site. The Remedial Investigation and Feasibility Study (RI/FS) were considered completed in May 1985; however, subsequent discovery of contamination beneath the site resulted in more extensive groundwater studies.

PRINCIPAL CONTAMINANTS

A total of 61 contaminants have been identified at the Cleve Reber Site. Nine (9) of these were selected as indicator chemicals based on frequency of occurrence, potency, chemical class and toxicity/carcinogenicity. These include: aniline, benzene, hexachlorobenzene, hexachlorobutadiene, hexachloroethane, toluene, n-nitrosodiphenylamine, tetrachloroethylene and vinyl chloride.

ENVIRONMENTAL PATHWAYS

Environmental sampling has revealed organic and inorganic contaminants present, on and/or offsite, in surface soil, subsurface soil, surface water, groundwater, and in sediments. In addition, contamination was presumed to be present in aquatic organisms onsite, as estimated from measured surface water contamination levels and published bioconcentration factors. However, no sample analysis of aquatic organisms was conducted. Contamination was found in subsurface soils directly beneath the waste site to a depth of 30 feet, the greatest depth at which samples were taken. All four onsite surface ponds and surface pond sediments were found to be contaminated. Low level surface soil contamination was found to the east of the site.

Four aquifers were identified beneath the site: the Shallow Sand Aquifer (approximately 25-35 feet), the Deep Sand Aquifer (approximately 200-235 feet), the Norco Aquifer (approximately 250-350 feet), and the Gonzales Aquifer (approximately 500-650 feet). The Shallow Sand Aquifer beneath the site was found to be contaminated at levels exceeding a 10-6 excess cancer risk (p. 23 and 60, PHE; p. 5-30, Supplemental Report, Vol. 1). Low level contamination was reported in the Deep Sand Aquifer; however, whether this is real or artifact induced is inconclusive. In either case, the levels reported were below those of public health concern.

HUMAN EXPOSURE PATHWAYS

At present, the only potential human exposure pathway onsite are dermal absorption and ingestion of contaminated soil, and ingestion of contaminated aquatic organisms. Since the site is not in operation, the exposed population is small, consisting only of regulatory/monitoring personnel making infrequent site visits and trespassers who intrude on the site to hunt and fish.

The only offsite exposure pathways considered significant in the report were dermal absorption and ingestion of contaminated soil. However, surface contamination was low (estimated 220-330 ppb of hexachlorobenzene) and identified only in an unpopulated area east of the site. There is no indication from the information provided that these routes represent a potential public health concern.

The Shallow Sand Aquifer, is felt to be contaminated in the immediate vicinity of the site. This aquifers is not currently known to be used as a potable water source. However, the potential exists that at some time it could be used for human consumption.

DISCUSSION

A review of the Public Health Evaluation revealed several areas of concern. These areas are outlined in greater detail below.

1. Errors and omissions were noted in the various Reference Sections. The entire Reference Section of Appendix A was omitted. In addition, several literature references cited in the report narrative were not listed in the corresponding Reference Sections, thus preventing the reviewers from validating data, calculations and judging conclusions based on cited references.

2. Numerous samples were listed as having QC/QA problems (p.15-19, PHE), and therefore were not usable.

3. Selection of Indicator Chemicals

   Of the 61 different chemical compounds identified at the site, nine (9) were selected as indicator chemicals. Although ATSDR has no reason to doubt the appropriateness of the nine chemicals selected, the report did not provide a clear, understandable rationale for their selection.

4. Surface Water Contamination

   Apparently the pond identified as Pond D (p.5, PHE) is not located entirely onsite, but extends offsite for more than one-half of its surface area. Since Pond D has been shown to be contaminated, offsite access should also be restricted.

5. Offsite Surface Water, Sediments and Surface Soil

   The PHE (p.7) states that drainage of the site is to the southeast toward the Panama Canal. The report (p.36) further states that the site and all the contaminated surface ponds tend to overflow, again toward the southeast after heavy rainstorms. Surface soil samples were therefore collected east of the site out to 200 feet in a down drainage location toward the Panama Canal. The results indicated that offsite migration had occurred at some time, probably from surface water runoff from the site. However, the levels reported as being

presently found (estimated values of hexachlorobenzene of 220-330 ppb) are not of public health concern. Sediment and surface water samples collected upstream and downstream in the Panama Canal failed to identify site related contaminants of concern. Surface water samples taken in a down gradient drainage ditch of Route 70, west of the site, revealed no significant semivolatiles or volatiles. Sediment samples from the ditch identified benzoic acid (9,200 ppb) and 1,1,2,2, -tetrachlorethane (750 ppb) as being present. Additionally, seven (7) surface soil samples were collected in nearby residential yards with no contaminant of concern being found. Based on the sample results reported, offsite contamination was not identified as being a problem at this time.

6. Groundwater

There tends to be conflicting information provided in the PHE, particularly for the Deep Sand Aquifer. The PHE (p.35) states that the "Deep Sand Aquifer has not been contaminated by the site's chemicals", while on p.60 it reports that "Levels of hexachlorobenzene exceed the concentration corresponding to a 10-6 excess lifetime cancer risk in both the Deep and Shallow Sand Aquifers offsite." Table 2-4, p.23, indicates the range for hexachlorobenzene in the Deep Sand Aquifer is from 0.006-0.037 mcg/l while the excess lifetime cancer risk is 0.02 - mcg/l (p.A-20). The Supplemental Report, Vol. 1 (p.5-29), indicates that because of artifacts from well installation, the hexachlorobenzene levels are lower than reported and "The site has apparently not affected water quality in the Deep Sand." The discrepancies above, and possible in other locations in the documents, should be reconciled.

It was indicated that wells initially drilled for groundwater sampling were, in general, not suitable to support collection of high integrity samples for laboratory analysis using part-per-trillion detection limits. This was accounted for, in part, by low level contamination on the surfaces of the drilling tools and in materials used to construct the wells that could show up as low level contamination in the samples (p.5-9, Supplemental Report, Vol. 1). The PVC Shallow Sand and W-1 Deep Sand results were felt to have been influenced by contaminants introduced on well materials or from well construction techniques, as well as, any aquifer contamination. Paired sampling using stainless steel, ultra clean constructed wells beside PVC wells tended to support this claim.

Water in four (4) nearby residential wells, presumably located in the Norco Aquifer, were sampled. Hexachloro compounds were not detected (p.5-25, Supplemental Report, Vol. 1).

Wells B-14 and B-22 through the waste pit area and into the Shallow Sand Aquifer showed high levels of contamination. Even though PVC pipe was used, and there was possible contamination associated with installation problems, the levels were high enough to indicate a groundwater problem in the Shallow Sand Aquifer under the site (p.5-32, Supplemental Report, Vol. 1). Of the fourteen (14) stainless steel perimeter wells installed in the Shallow Sand Aquifer, nine (9) reflected hexachlorobenzene concentrations equal to or less than their baseline concentration and below health criteria limits. Baseline concentration as used in the report is the minimum level of background contamination felt to have been introduced into the sample based on the analysis of field and sample blanks (p.1-12, Supplemental Report, Vol. 1). Therefore, while hexachlorobenzene contamination of the Shallow Sand Aquifer is shown beneath the site, offsite migration was not identified.

Monitoring of the Deep Sand Aquifer was provided by wells W-2, W-3, W-4 and W-1A. The results from this monitoring are considered inconclusive. While low levels of contamination were reported, this may be associated with the well construction and installation materials. Other features of the site (i.e., the clay layer between the aquifers, gradients) would tend to support this contention. Samples were not taken in the Deep Sand Aquifer under the waste pit, so no comment may be made regarding this area.

7. Subsurface Soil Contamination

The PHE (p.32) states that the public health hazard due to subsurface soil is minimal because subsurface soil contamination, "is at a depth exceeding 30 feet." This statement is misleading in that 30 feet is not the minimum depth at which subsurface soil samples were found, but rather the maximum depth at which subsurface soil samples were taken. Moreover, contamination was found throughout the depths sampled (p. 3-4 and 3-5, Supplemental Report, Vol. 1), with the highest contaminant levels often occurring at the deepest depths sampled, i.e., 28-30 feet. This depth corresponds to the approximate upper limit of the Shallow Sand Aquifer. These findings indicate both that the clay strata underlying the site is a very poor barrier to contaminant migration and that the potential for continuing contamination of this aquifer is relatively great.

CONCLUSIONS

Potential onsite exposure routes have been shown for worker personnel and trespassers. Public health threats to these persons should be easily controlled through implementation and enforcement of appropriate safeguards.

Low levels of hexachlorobenzene in surface soil to the east of the site indicates that migration has occurred at some time. However, surface water, sediment and/or surface soil samples taken in the Panama Canal and residential areas did not indicate a present migration problem from the site.

Groundwater contamination of the Shallow Sand Aquifer at the site does not represent a public health threat since it is not used as a potable water source. However, the possibility exists that the aquifer could be used as a potable water source at some time in the future. Monitoring results for contaminants in the Deep Sand Aquifer were considered inconclusive.

RECOMMENDATIONS

1. Monitor for offsite migration of groundwater in both the Shallow and Deep Sand Aquifers on a periodic basis.

2. Institute appropriate measures to assure that the Shallow Sand Aquifer will not be used as a potable water source.

We trust that these comments will be helpful.

REVIEWERS

Dennis E. Jones
George L. Pettigrew

Concurrence: Carl R. Hickam, R.S.

cc: Mark M. Bashor, Ph.D.

APPENDIX B

CLEVE REBER COMMUNITY RELATIONS
RESPONSIVENESS SUMMARY

This community relations responsiveness summary is divided into the following sections:

Section I: Background on Community Involvement and Concerns This section provides a brief history of community interest and concerns raised during the remedial planning activities at the Cleve Reber site.

Section II: Summary of Comments Received During the Public Comment Period Comments are categorized by topic with EPA's responses provided.

I. BACKGROUND ON COMMUNITY INVOLVEMENT

From 1970-1974 the site was an active landfill. Superfund involvement began in 1983 with an emergency removal of approximately 1,100 drums. At this time, chemical waste piles were also removed and a temporary clay cap was placed over much of the site.

A press release for the site was orginally issued on May 31, 1985. This press release gave a brief description of the site history and hazards and also identified the EPA's proposed remedial action. At the time EPA's proposed remedy was a cap-in-place remedial action. A public meeting was announced for June 26, 1985, and written comments prior to this meeting were to be submitted to EPA's Regional Office.

A seperate fact sheet, in addition to the RI/FS documents, was placed in various repositories for public review. The locations of these repositories was mentioned in the press release. The public meeting was held on June 26, 1985, at the Gonzales Holiday Inn, in Gonzales, Louisiana.

Approximately 120 people attended the public meeting. The EPA conducted the meeting and the Louisiana Department of Environmental Quality (LDEQ) had representatives in attendance. In addition to local citizens, one environmental group was represented. Save Our Selves (S.O.S.) is an Ascension Parish based group that is actively involved in most area environmental issues that relate to hazardous waste. The people in attendance were unanimous in their opposition to EPA's proposed remedy. Everyone wanted to see the complete excavation and removal of the site wastes.

Subsequent to this meeting another groundwater sampling effort was conducted. During this investigation contamination was discovered in a thin unused water-bearing zone located approximately 30 feet below

the ground surface. Another fact sheet was released on July 1985, indicating that the Agency would postpone a final decision on the final remedy until a more comprehensive groundwater investigation was completed.

The Supplemental Investigation began in January 1987 and fact sheet was issued indicating the start of the field work. The investigation was completed in the spring of 1986. The RI/FS report was finalized at the end of September 1987.

In an effort to solicit public input into the remedy selection process and also to educate the public on EPA's proposed remedial action, a technical incineration workshop with those local residents living next to the site was held on December 17, 1986, at the Ascension Parish Police Jury Offices in Gonzales, Louisiana. The people expressed interest in EPA's proposal. They were cautiously optimistic about the proposal.

The press release for the public meeting was issued in December 1986; this announced the proposed remedy and the public comment period. The public meeting was to be held on January 7, 1986. The meeting was postponed, however, at the public's request by one month. A public meeting was held on February 4, 1987, at the Gonzales Holiday Inn, in Gonzales, Louisiana. Approximately 400 people attended this meeting. The EPA conducted the meeting and representatives from LDEQ were in attendance. Three local environmental groups attended the meeting; S.O.S.; Ascension Parish Residents Against Toxic Pollution (APRATP) and Ascension Parish Citizens Againsts Toxic Wastes (APCATW). The Sierra Club was also represented. Most people were in favor of the proposed remedy of onsite incineration of the buried wastes. Significant concerns were raised only about the actual details to be developed in the Remedial Design phase.

After the public meeting, due to public request, the comment period was extended one month until March 13, 1987.

II. SUMMARY OF COMMENTS RECEIVED

Summary of the questions asked either during the public meeting or the public comment period are as follows:

1) Is there any financial assistance available to help citizens participate in the selection of the remedial action?

   SARA provides for up to a $50,000 grant to be made to a citizen group in order to facilitate public participation and understanding of technical Superfund data. Not more than one grant may be made with respect to a single Superfund site. Each grant recipient is required to contribute at least 20% of the total $50,000. The 20% contribution requirement might be waived under certain circumstances.

   Currently, it is not known how a determination will be made between different groups requesting the funds or who will decide this issue.

There are numerous as yet unresolved questions about how EPA should implement this statutory provision. Questions range from qualifications and eligibility criteria for interest groups to accounting methodologies. These issues will be addressed in regulations that EPA will propose in the Spring of 1987.

2) Will EPA extend the public comment period 3 months to allow citizens to further review the documents and make comments?

No. An extension of 30 days (until March 13, 1986) was, however, granted to allow for additional review of the supplemental Remedial Investigation/Feasibility Study (RI/FS). Prior to the public meeting, to encourage public involvement and to attempt to solicit local input, a technical workshop was conducted for area residents in December 1986. During this meeting copies of the RI/FS were distributed to interested individuals.

In addition to the above, the public meeting originally scheduled for early January was postponed until February 4, 1987, in response to requests from local citizens. EPA has more that fulfilled its responsibilities to solicit and receive public input in its decision making process.

3) Has the contamination been clearly defined?

Yes, the extent of the contamination has been defined. Significant contamination is restricted to the facility boundaries as defined by the fence line.

To characterize the site, on-site and off-site soil and water samples were taken. This included sampling residential wells. Monitoring wells were also installed within a one-half mile radius of the site. Analysis showed all offsite (and residential) wells to be clean. Testing did not detect any significant offsite contamination. Monitoring will be updated to keep data current.

4) Was there, or will there be, any sample splitting by the EPA to insure the quality of the data?

Yes there was. There were splits of selected samples analyzed by another lab, which was under contract to a group of companies who sent waste to the site. Considering the maintenance of strict quality assurance and quality controls, confidence is high with respect to the data quality.

5) How will EPA address health hazards posed to the construction people associated with cleanup?

Any potential health hazards posed to the construction people will be specifically addressed in the design and during implementation of the remedy. There will be a Site Safety Plan (SSP) which deals specifically with questions of safety related to the site. A site

Health and Safety Officer will be present for all site-related activities to ensure adherence to the SSP so that all exposed personnel are protected.

6) How will EPA control dust and noise associated with onsite construction?

The dust and noise from the onsite contruction related activities, hours of operation at the site, and any other such specifics will be considered during the Remedial Design. Through best engineering judgement and continued input from the community a design will be proposed which will be in the best interest of the public. Any inconveniences will be minimized.

7) Will the incineration emissions or ash be toxic?

No. The incinerator will be designed and operated to ensure safe air emissions and to ensure a nonhazardous ash. Crucial to this will be the segregation and processing of all wastes prior to entry into the thermal destruction unit. Air pollution control and monitoring devices in addition to ash testing will ensure the proper operation of the unit.

8) Are any evacuations (temporary or long term) or relocations planned?

No evacuations are anticipated.

9) Will EPA have a SARA workshop in Ascension Parish, since there are 3 NPL sites in the parish?

The EPA held a SARA workshop in New Orleans at the end of February 1987. This was mentioned at the public meeting and people were encouraged to attend. The EPA will consider holding another workshop on SARA if the local citizens can generate enough support.

10) Will EPA have information workshops for the local residents?

Yes. Once a decision is made concerning the remedy the EPA will continue to inform and involve the public through fact sheets and press releases. The next major step is formulation of design plans for the selected remedy. During the cleanup process EPA will hold workshops to keep the public informed.

11) Why was the remedy changed to thermal destruction?

The intial remedial proposal involved capping the wastes in place. This was proposed at the public meeting in June 1985.

Two factors attributed to a change in the proposed remedy: 1) The discovery that hexachlorobenzene (HCB), the major site contaminant of concern, was present in a thin, water bearing zone approximately 30 feet below the ground surface (this data indicated, contrary to earlier investigative findings, the underlying clays are relatively permeable) and 2) The promulgation of SARA encouraged EPA to apply

technologies which will significantly mitigate or reduce the toxicity, mobility, or volume of the waste. The SARA provisions specify a preference for permanent remedies. The new remedy addresses earlier concerns with capping wastes in place, and complies with the provisions and preferences of SARA by permanently destroying the wastes.

12) How will the thermal destruction unit be monitored?

The monitoring will be specified in the design. Methods now in use include such things as monitoring for various indicator parameters which will examine the efficiency of the thermal destruction unit. The detailed design would list the variables which would be continously checked. Specific acceptable operating limits which would be analyzed include: carbon monoxide in stack exhaust gas, waste feed rate, combustion temperature, appropriate indicators of combustion gas velocity, allowable variations to any design parameters, etc. These variables would be examined in a trial burn performance test. Proper setting of the operating parameters assures the efficient and effective destruction of the organic wastes.

13) Has incineration been proven a failure throughout the U.S.?

No. Thermal destruction has been successful at various Superfund sites, including two in Florida. These sites, Peak Oil and Sidney Mines, and other successful thermal destruction remedies exhibit the pragmatic acceptability of this technology.

14) Will the incinerator ash be hazardous and have to go to a RCRA Class 1 landfill?

No. The ultimate handling of the ash will be a factor of the metal content of the ash from the thermal destruction unit. The organics will be oxidized but the inorganics can not be thermally destroyed. If such compounds are found in significant concentrations the incinerator ash will be chemically stabilized to reduce the mobility of the inorganic waste. This is not anticipated to be a problem.

15) Isn't it true an EPA advisory board study on incineration said toxicities of stack emissions and incinerator effluents are largely unknown?

This question incorporates a statement from the EPA study taken out of context. The publication cited is the April 5, 1985, report by the agency's Science Advisory Board to the Administrator of the EPA. The report states; "To date only a very small portion of the compounds found in emissions from incinerators has been identified qualitatively or quantitively. As a consequence the concept of destruction efficiency (while valid for comparing the relative operating performance of incinerators) does not completely address the problem of what is emitted from the incinerator stack and does not, therefore, constitute a reliable basis for developing exposure assessments."

The report also stated, among other things, "Incineration is a valuable and potentially safe means for disposing of hazardous chemicals, and EPA has made progress in developing regulatory strategy." The committee went on to advise, "Comments, both positive and negative, should be interpreted by the Agency and the public as a desire to strengthen already existing incineration programs rather than to discontinue what is already in place."

The report dealt with modular incinerators which did not have any emission controls. EPA's proposal is for a thermal destruction system which would incorporate contaminant handling, segregation, and processing. This state-of-the-art incinerator will have air pollution control devices and a feedback control system. Any discharges would be monitored and analyzed.

16) Are there barrels on the surface of the site?

No drums of hazardous materials exist onsite. All such drums containing hazardous materials were removed by EPA in July 1983. The existing barrels on the site contain investigation derived material: drill cuttings, decontamination water, white tyvek suits, etc. These will be disposed of as part of the Remedial Action.

17) Is there any danger from cadmium or cadmium oxide?

No. Neither cadmium or cadmium oxide are contaminants of concern at the Cleve Reber Site.

18) EPA uses "cost-effectiveness" as an indicator of feasibility for a particular remedy. What is "cost-effectiveness"?

Cost effectiveness is one of many factors that EPA uses to evaluate and select a remedy. It refers to the ability of an alternative to achieve the required performance standards for the least money. If two alternatives provide an equal level of protection, the preferred alternative will be the less expensive - all other considerations being equal. The selected remedy, most importantly, must be protective of human health and the environment.

19) Why should Ascension Parish accept thermal destruction when the incinerator in St. Helena Parish is being closed?

The St. Helena Parish incinerator is a commercial incinerator. This permanent facility would be operated on a "for-profit" basis and as such would have an economic incenitive to receive and treat/destroy high volumes of waste. Such an incinerator is normally very large.

The incinerator/thermal destruction unit envisioned for Cleve Reber is completely different. It will be a temporary, mobile onsite unit. The motivating factor for operation is destruction efficiency; not profit and speed.

The EPA is not advocating the use of a permanent onsite incinerator. The mobile unit will be removed after approximately 1.5 years.

20) In the Feasibility Study describing the site, it was stated that there could be short term affects from discharging water to the Panama Canal. How dangerous will this be?

This will not be a problem. The discharge will comply with existing regulations and requirements that apply to surface water quality. The potential exists that low concentrations of contaminants would be discharged into the canal, but such concentrations are not envisioned to have any adverse environmental impact.

21) Can EPA contract to a Louisiana business to conduct the remedial action?

The contracting for the site could be done two ways. If the potentially responsible parties come forward to do the action, they can use whatever firm they wish. The only stipulation is that this contractor or vendor meet the standards set forth by EPA.

If the responsible parties do not elect to do the work, the EPA will fund the clean-up. Any government contracting must follow Federal procurement regulations. Under Federal procurement rules no local preference can be given. Local companies will, however, have an opportunity to bid on the project.

22) The most appropriate site remedial action cannot be determined until the quantity of waste is characterized and located in better detail EPA has not defined the extent of the allegedly contaminated area.

This is not true. The quantity and location of waste has been identified in the detail necessary to identify a suitable remedy and to proceed to the Remedial Design phase.

23) Why is any action necessary at the site since the wastes are contained in an almost vault-like, protective layer and there is an absence of contaminated groundwater?

Groundwater contamination does exist in the Shallow Sand (approximately 30 feet). Action is necessary to eliminate the potential for continued groundwater contamination migration. Such continued migration would further contaminate the groundwater, thereby increasing the risk of human ingestion if an individual was to place a well through or into the contaminated zone.

24) The contractor's method of drilling test borings and wells and their failure to plug all such holes increases the potential for vertical migration of contaminants.

This is not true. The on-site wells and borings have been installed to minimize the potential for the vertical migration of contaminants. The wells and borings will ultimately be plugged as part of the final remedial action, but not before their usefulness has past. EPA envisions resampling some of these wells in the future.

25) Is it true the newly announced clean-up plan doesn't comply with the requirements of SARA because it appears to go for a clean-up remedy that is too permanent and not cost-effective compared to the previously suggested remedy?

No. The original Cleve Reber remedy which involved capping the waste in place would require perpetual operation and maintenance. The original remedy would not reduce volume or toxicity but would possibly only slow down contaminant migration.

The currently proposed alternative meets the intent and the preference of SARA. It is the most cost-effective, permanent remedial action studied. Not all site contamination is to be excavated and destroyed, only that which is considered to pose a potential future health or environmental risk. Residual contamination left on-site will be sufficiently attenuated in the local clays as to not create a future threat. The site will be capped.

26) Why do you use the term thermal destruction instead of incineration?

Incineration is just one form of thermal destruction. There are many forms of thermal destruction that can be applied to the site. The Remedial Design will not specify a particular type of thermal destruction system, but will emphasize performance standards.

27) Can the EPA organize a citizens advisory committee?

In our continuing efforts to enhance public involvement we will look into the possibility of forming a task force. Such a task force, if established, would likely be charged with keeping the public informed of the day-to-day details and act as liason for continuing public concerns.

28) Can Ascension Parish have their own inspector, trained at the potentially responsible parties expense?

If the responsible parties voluntarily acted on such a request it would be their prerogative. The incinerator would be inspected and monitored on a regular basis by the EPA and the State. Such monitoring will be sufficient to ensure the effectiveness of the thermal destruction process.

APPENDIX C

APPENDIX

ARARs

REGULATIONS APPLICABLE TO ASSEMBLED ALTERNATIVES

Regulation	Source of Requirement	Requirement	Causes for Initiation	Possible Application to Alternatives
Hazardous Waste Management and Transportation				
Federal requirements under the Resource Conservation and Recovery Act	RCRA §3005, 40 CFR 122	If, in the course of a remedial action, hazardous wastes are to be treated, stored, or disposed on site, RCRA requirements may be applicable	Are hazardous wastes being treated, stored, or disposed on site?	All
State Hazardous Waste Site Permit	Hazardous Waste Laws or Requirements in 44 States	If a new hazardous waste facility must be created to handle the wastes, 44 states require state approval and/or permit as a precondition. 14 of these states could own and/or operate the facility themselves; 18 states preempt local regulation, and 8 allow for veto of the state decision	Will the remedy require siting or construction of a new hazardous waste management facility either at the site to be remedied or remote from the site?	2
Local Operating Permit or License for Remedy	Zoning, Building or Fire Code, or Local Licensing Laws (e.g. operation of a waste management facility)	Obtain permit or license approving operation of site after remedial action	Do site activities that are integral to the remedy require a local permit, license or payment of a fee or a tax before as planned operation can begin?	2,3,4,5
Federal Manifest for Transport	RCRA §3002(5), 40 CFR 262	If hazardous wastes from a remedial action are to be transported off site, compliance with the RCRA manifest system may be required.	Will hazardous wastes be transported off site?	2,3,4,5
State Hazardous Waste Manifest	Hazardous Waste Management Laws in 31 States	In general, the manifest systems require generator to use only licensed transporters and to designate only a permitted TSD facility to take delivery of wastes	Will hazardous wastes be transported elsewhere?	2,3,4,5
State Permit or License for Transport of Hazardous Waste	Hazardous Waste Management Laws, Hazardous Materials Transport Laws, or Commercial Driver Licensing Laws in 39 States	Obtain permit to transport hazardous wastes on public rights-of-way within state or license to operate a mode of transport for hazardous materials within the state	Will hazardous wastes or hazardous material be transported elsewhere?	2,3,4,5

ARARs cont.

Regulation	Source of Requirement	Requirement	Causes for Initiation	Possible Application to Alternatives
Response in a Flood Plain	Executive Order 11988	Requires Federal agencies to evaluate potential effects of planned actions in a flood plain to reduce risk of flood loss and restore and preserve the natural and beneficial values served by the flood plain. Requires notification of state agencies and public review of proposed activity. Facilities must be constructed consistent with standards established under the National Flood Insurance Program	Is remedial action in a flood plain subject to E.O. 11988?	All
Local Approval of Grading (Erosion Control) Permit	Local Grading Ordinances or Erosion Control Ordinances. In Some States, Such Permits are Also a Part of State Land Use Controls	Requirements affecting land slope and cover, surface water management, alteration of natural contours, or cover by excavation or fill	Will the remedy require land grading? Is the site in a "critical area," flood plain, wetland, or agricultural conservation zone?	2,3,4,5
Local Approval of Use Permit	Local Building Code	Demonstration through presentation of evidence or onsite inspection that remedial action complies with the requirements of local health and safety laws and ordinances	Has the remedy required issuance of a building permit? Does the building code require a local use permit or certificate of compliance upon completion of the permitted work or for such a use?	2,3,4,5
Local Building (Construction) Permit	Local Building Code	Obtain building permit for construction of site improvements planned in remedial action.	Will any building, construction or demolition activities occur? Does the city or county have a building code?	2,3,4,5
Local Electrical Permit	Local Electrical Code	Obtain electrical permit for any wiring to be installed	Will the remedy require electrical work to be installed? Does the city or county have an electrical code or ordinance?	2,3,4,5

ARARs cont.

Regulation	Source of Requirement	Requirement	Causes for Initiation	Possible Application to Alternatives
NPDES Requirements Under the Clean Water Act	CWA §402, 40 CFR 122	If, in the course of remedial action the direct discharge of pollutants into navigable waters is part of the remedial action, an NPDES requirement may be applicable	Will pollutants be discharged directly into navigable waters?	2,3,4,5
Approval of Well Permit	State or Local Governing Health, Water Conservation or Water Use	County, city, special purpose district or state approval of the quality, quantity, source and/or use of groundwaters or of activities that could degrade the quality or recharge of groundwater	Does planning for remedy require the drilling of new water quality monitoring wells? Does initial remedy or full remedy require the drilling of wells for water supply (especially potable supplies)? Does the remedy involve purging the aquifer?	2,3,4,5,
State Permit Requirements for Emissions in PSD Areas	Clean Air Act, Part C; State Implementation Plans	A major source of air pollutants in PSD area must be permitted by the state and is subject to requirements applicable to PSD areas	Will the proposed remedy involve air emissions? Is the site in a PSD area?	2,3,4,5
State Permit Requirements for Emissions in Non-attainment Area	Clean Air Act, Part D; State Implementation Plans	A major source located in a non-attainment area for those pollutants for which it is a major source must comply with requirements applicable to non-attainment areas	Will the proposed remedy involve air emissions? Is the site in a non-attainment area for a pollutant emitted?	2,3,4,5
National Emissions Standards for Hazardous Air Pollutants	Clean Air Act, §112;	Significant sources of pollution listed as hazardous are subject to NESHAPs	Will the proposed remedy involve emissions of hazardous air pollutants?	2,3,4,5
Intergovernmental Review of Federal Program	Executive Order 12372; 40 CFR 29. (Replaces state and areawide coordination process required by OMB Circular A-95)	Effective 10/1/83, new regulations at 40 CFR 29 establish procedures for state and local coordination and review of proposed EPA assisted projects. The EPA administrator is required to: communicate with state and local officials to explain the project; consult with other affected Federal agencies; and provide a comment period for state review	Publication in the Federal Register of applicable projects	All

APPENDIX D

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service

Agency for Toxic Substances
and Disease Registry
Atlanta GA 30333

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March 31, 1987

MEMORANDUM

SUBJECT: Cleve Reber Site, Ascension Parish, Sorrento, Louisiana
SI-87-016

FROM: Health Assessment Reviewers
Office of Health Assessments
Regional Office for Health Response - Region VI

TO: The Record

EXECUTIVE SUMMARY

The Region VI Office of the United States Environmental Protection Agency (USEPA) has requested the Agency for Toxic Substances and Disease Registry (ATSDR) to review the final Public Health Evaluation (PHE) for the Cleve Reber Site in Ascension Parish, Sorrento, Louisiana. This site is a landfill with a history of use as a disposal area for both municipal and industrial wastes. More than 60 contaminants have been identified at the site with nine (9) selected as indicator chemicals. Risk assessments for hypothetical onsite use yield excess lifetime cancer risk estimates of 10-7 to 10-5 for dermal contact and soil ingestion, and 10-5 to 10-4 for ingestion of fish. While low levels of contamination were identified east of the site, there was no indication that, at this time, offsite contamination represents a public health problem. Indications are that the Shallow Sand Aquifer has been contaminated beneath the site. However, since the aquifer is not used as a potable water source, a risk assessment for water ingestion was not calculated. This health assessment, based on additional information received, supercedes the one issued on January 15, 1987.

DOCUMENTS REVIEWED

1. Memorandum, dated 15 October, 1986, from Steve Gilrein, EPA Region VI, to Carl Hickam, ATSDR Health Advisor, EPA Region VI Field Office, requesting review and evaluation of the Public Health Evaluation for the Cleve Reber Superfund Site.

2. United States Geological Survey 7.5' Topographic Map, Gonzales Quadrangle, Louisiana, dated 1961, photorevised 1980.

Martha A. Madden
SECRETARY

OFFICE OF SOLID AND HAZARDOUS WASTE

JOHN KOURY
ASSISTANT SECRETARY

March 25, 1987

Mr. Allyn M. Davis
Director
Hazardous Waste Management Division
US EPA Region VI
1445 Ross Avenue
Dallas, Texas 75202-2733

RE: STATE CONCURRENCE ON CLEVE REBER REMEDIAL ACTION

Dear Mr. Davis:

Having reveiwed the Feasibility Report and Conceptual Remedial Action proposal by EPA for the Cleve Reber Superfund Site, the Department of Environmental Quality is in concurrence with the proposed Remedial Action.

DEQ anticipates that we will be fully informed of progess and will be given opportunity to make necessary technical comments during the Engineering Design phase of the Cleve Reber project.

I wish to thank you for assistance provided by your staff in discussions of technical issues with DEQ staff.

Sincerely,

Hall Bohlinger, Deputy Secretary

for Martha A. Madden
Secretary

MAM/WBD/de